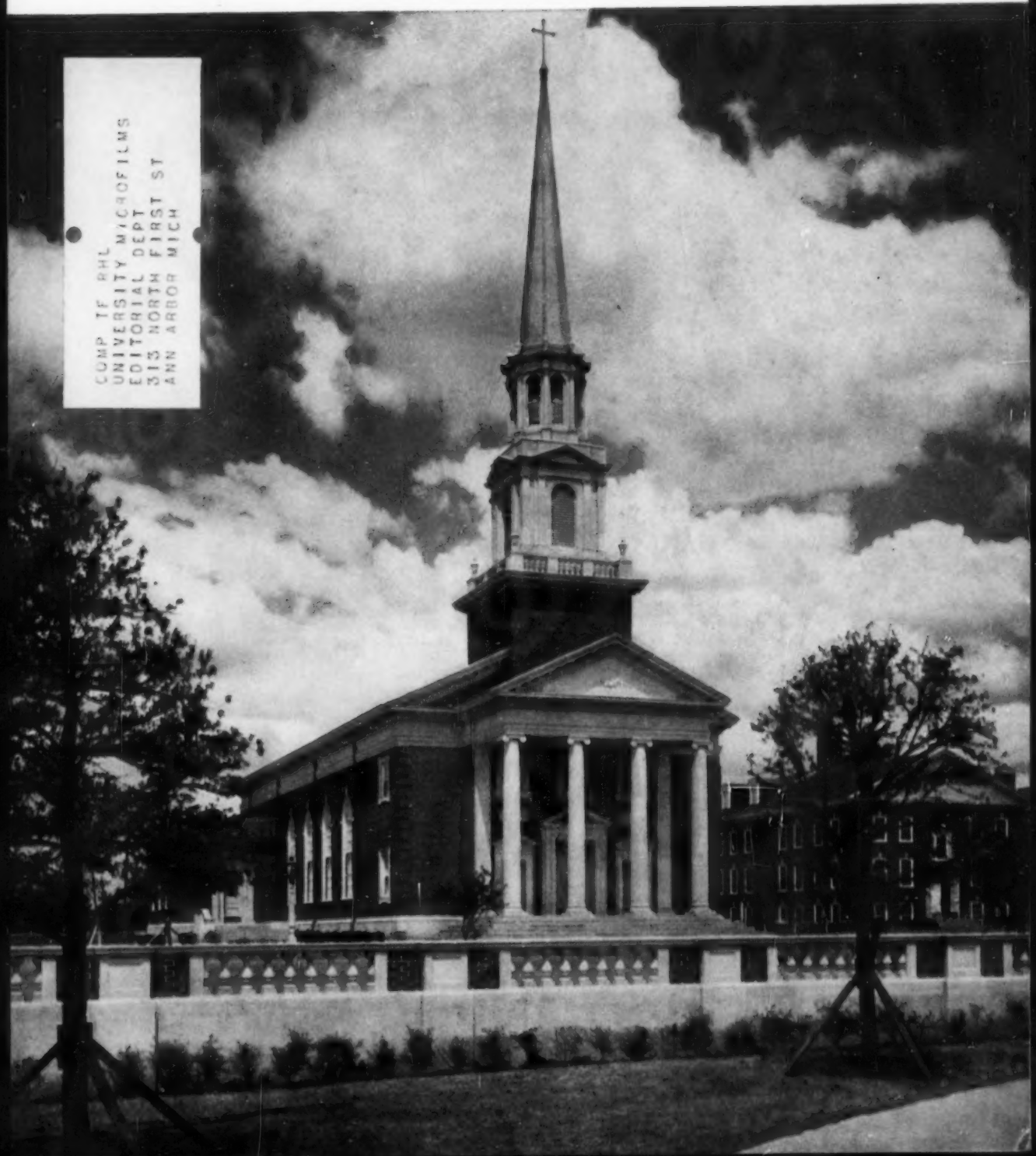
A CAHNERS PUBLICATION

DECEMBER, 1960/75c

Brick & Clay RECORD



COMP TF PHL
UNIVERSITY MICROFILMS
EDITORIAL DEPT
313 NORTH FIRST ST
ANN ARBOR MICH

BESSEMER (PA.)
PLANT
OF
METROPOLITAN
BRICK, INC.

world's *largest** brick kiln supplied by BONNOT Extruders continuously for 30 years

STEP AHEAD WITH BONNOT

CRUSHERS • HAMMER MILLS • DRY PANS
WET PANS • GRINDERS • FEEDERS • CUTTERS
REPRESSES • SPECIAL MACHINES TO ORDER
DIRECT FOUNDRY SERVICE • DIES • MIXERS
VACUUM MACHINES • SPECIAL EXTRUDERS
AUGER MACHINES • PUG MILLS

You can use your own mathematics to compile **how many millions of brick** have been produced by the pair of Bonnot Extruders installed by Metropolitan Brick, Inc. in their Bessemer (Pa.) plant when it was rebuilt after a fire in 1929.**

Two of eight Bonnot Extruders now operated by Metropolitan, the veteran "Bessemer twins" continue to supply the half mile long horseshoe kiln,* longest of its kind in the world.

"Whether it's big, rugged 'pavers' (today used principally for tunnel work and industrial floors) or colorful architectural face brick, these extruders "deliver the goods on their **year-in, year-out schedule,**" according to Ralph G. Sterling, Metropolitan vice president in charge of production.

"Regardless of our demands for quantity and quality," he continues, "Bonnot machines operate efficiently and economically, and when service on wearing parts is necessary, we can count on real cooperation from Bonnot's own foundry."

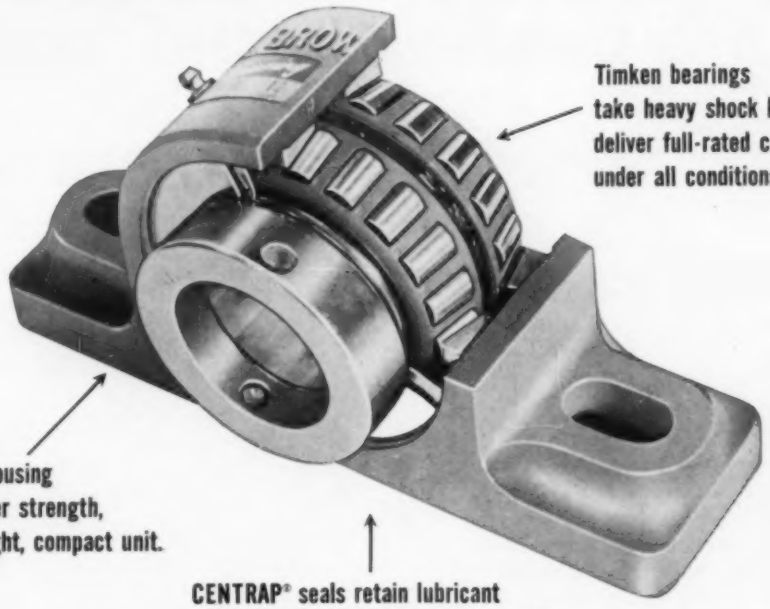
Proved by Performance . . . Advanced in Design to Meet Modern Demands, Bonnot Equipment can produce profitably in your plant. Your questions will get prompt attention from Bonnot Engineers.

The BONNOT Co.
CANTON 2, OHIO

**Additional Bonnot equipment included 2 Cutters, 2 10' Dry Pans, 2 Plate Feeders, 2 Disc Feeders and 6 Repress

Circle Service No. 10

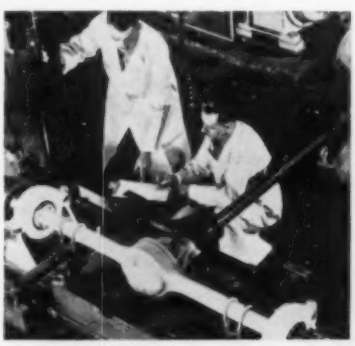
Browning malleable housings team up with Timken® bearings for greater capacity and strength



To be sure their PB900 pillow block has maximum ability to take heavy loads, Browning Manufacturing Company, Maysville, Kentucky, uses a malleable housing and Timken® tapered roller bearings. The malleable housing permits a stronger yet lighter, more compact unit. The Timken bearings provide higher load-carrying capacity and longer life in minimum space—more than any other type of bearing.

It's the tapered design of Timken bearings that enables them to take *both* radial and thrust loads. Full-line contact between rollers and races and precision manufacture give Timken bearings *extra* load-carrying capacity. And they're made from the finest bearing-quality alloy steel available to withstand shock.

OUR ON-THE-SPOT ENGINEERING SERVICE saves customers time and trouble. Our graduate engineer salesmen help you select the most economical bearing for your job.



TESTING FACILITIES in our modern laboratories help us solve customer bearing problems—develop new bearings just as we did for Browning Manufacturing Company.

Industry rolls on

TIMKEN®

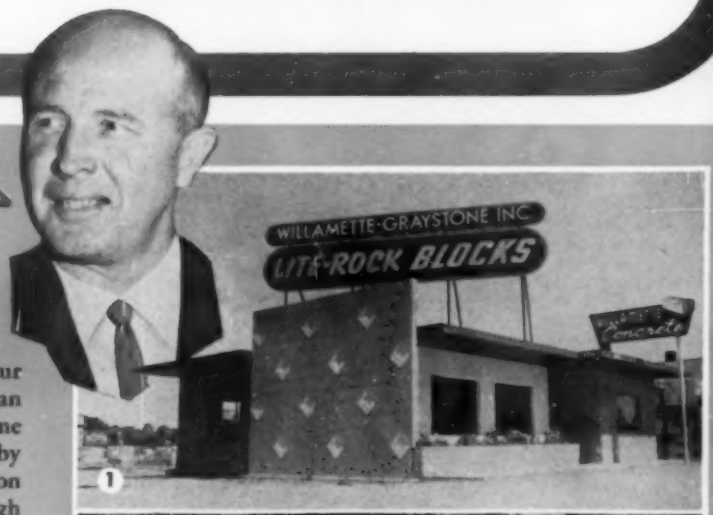
tapered roller bearings

The Timken Roller Bearing Company, Canton 6, Ohio. Cable: "TIMROSCO". Makers of Tapered Roller Bearings, Fine Alloy Steel and Removable Rock Bits. Canadian Division: Canadian Timken, St. Thomas, Ont.

Circle Service No. 11

"Our Production is 35% Higher ... our production cost 25% less— since we installed the new Columbia Loader and Unloader."

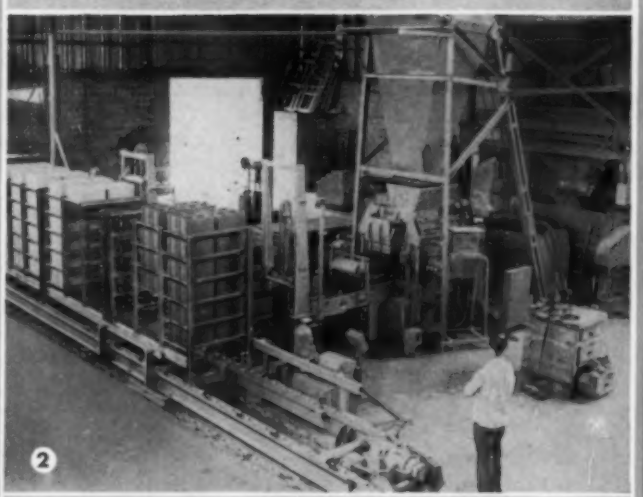
Says Don W. Jones
President & General Manager
Willamette-Graystone, Inc.
Eugene, Oregon



"Since the installation of our Columbia Rack Loader and Unloader last July, our Eugene plant is now almost completely automatic, states Mr. Jones, and our production volume has increased more than 35%, and is climbing every day. At the same time our production costs have been cut by 25%. Other factors in our increased production are the extra large kilns—designed for high volume steam curing and fast hot air drying—and the almost total lack of culls and broken block."

Willamette-Graystone is another Columbia equipped plant giving the owners day-after-day high speed production of quality concrete blocks. Included in this modern layout is a Columbia Model 10—12" high block machine, cement silo, aggregate bins, weigh batcher, cubing offbearer and Automatic Rack Loader and Unloader.

1. The office of Willamette-Graystone is not only functional but is also used as a showcase for the many types of blocks produced.



2. General view of the Willamette-Graystone plant, showing the Loader and Unloader, the Model 10—12" High block machine, Mixer, Skip Hoist and Weigh Batcher. Only part of dry storage bins and silos are shown in this photo.

3. Covered storage sheds with a capacity of 150,000 units, give yard and delivery men a dry place to work in all kinds of weather.

For the finest plant equipment ... buy Columbia. Write, wire or phone today.

Columbia MACHINE

Home Office: 107 Grand Blvd., Vancouver, Washington
Factory Branch and Warehouse: Mattoon, Illinois
Parts Depot and Office: Burbank, California

Manufacturers and world wide distributors of a complete line of plant equipment for production of concrete products

THIS MONTH'S COVER

Perkins Chapel, Perkins Theological Quadrangle, Southern Methodist University, Dallas, Tex., a splendid brick structure and symbolic of the season. This issue marks the end of another productive year and we the staff of your magazine would like to take this opportunity to wish you a Merry Christmas and a Prosperous New Year.

A CAHNERS PUBLICATION

Brick & Clay RECORD

The magazine of brick, drain tile, structural tile, clay aggregate, terra cotta, roofing tile, refractories, clay pipe, and abrasives.

Contents for December, 1960 • Vol. 137, No. 6

44 Pipe Plant Offers Flexibility, High Output
A highly automatic production annex has been added to the Robinson Clay Product Co.'s plant in Magadore, Ohio. The annex contains a 465-ft. tunnel kiln.

48 Rocklite Products Marks 20th Anniversary
Company has grown from one to five rotary kilns and is noted for its unusual aggregate.

51 Permanent Color for Lightweight Building Block
Lightweight structural blocks with permanent weatherproof color are now a reality and will soon be an important new product at the architect's disposal.

52 Southern Boasts New Grinding-Storage Unit
Activation of this unit completes a 4-year modernization program and gives Southern Brick Co., of Ninety Six, S. C., one of most modern and flexible plants in the South.

53 Give Your Equipment Cold Weather Care
Whether you use it or store it, your equipment needs special care during the winter months.

54 Clay Industry Optimistic for 1961
Those attending the 1960 SCPI convention heard of new plants, increased advertising and promotion and emphasis on education in clay products at college level.

56 Highlight Automation at French Lick
Plant visits, practical and semitechnical papers reward over 100 at ACS Structural Clay Products Division meeting.

58 New Refractory Scores at High Temperature
Glasrock has practically no expansion when heated, low thermal conductivity and excellent thermal shock resistance.

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Editorial

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ERNEST W. EHRKE, *Associate Editor*
WALTER W. KOCH, *Art Director*
**Ceramic Engineering Staff*

Sales Offices

HOME OFFICE: *5 S. Wabash, Chicago 3, Ill. Franklin 2-6880: Floyd M. Burdick, Business Manager; J. B. Stringer, Sales Representative; Roy Barron, Promotion Manager; Anne Anzak, Sales Assistant*

NEW YORK: *Albert S. Robinson, Vice President; Harry H. Linden, 55 W. 42nd St., Room 300, NYC 36. Lackawanna 4-9662*

CLEVELAND: *Richard F. Burkhart, Room 702, The B. F. Keith Building, 1621 Euclid Ave., Prospect 1-1312*

SOUTHERN: *John M. Printup, 121 S. E. First St., Miami, Fla., Phone: Franklin 9-2668*

DALLAS: *R. W. "Whit" Jones, John Printup & Assoc., 2607 Millmar Dr., Dallas 28, Tex. Phone: DAvis 1-0898*

CALIFORNIA: *Richard S. Meyer, 3137 Kelton Ave., Los Angeles 34*

PACIFIC NORTHWEST: *Frank J. McHugh, Jr., 520 S. W. 6th Ave., Portland 4, Oregon. Phone: CApital 6-2561. Also Seattle*

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Business

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R. H. LASH, *Exec. Dir. of Circulation*
H. G. LOVE, *Circulation Director*

Leading Clay Journal of The World
Established 1892; Now in 68th Year

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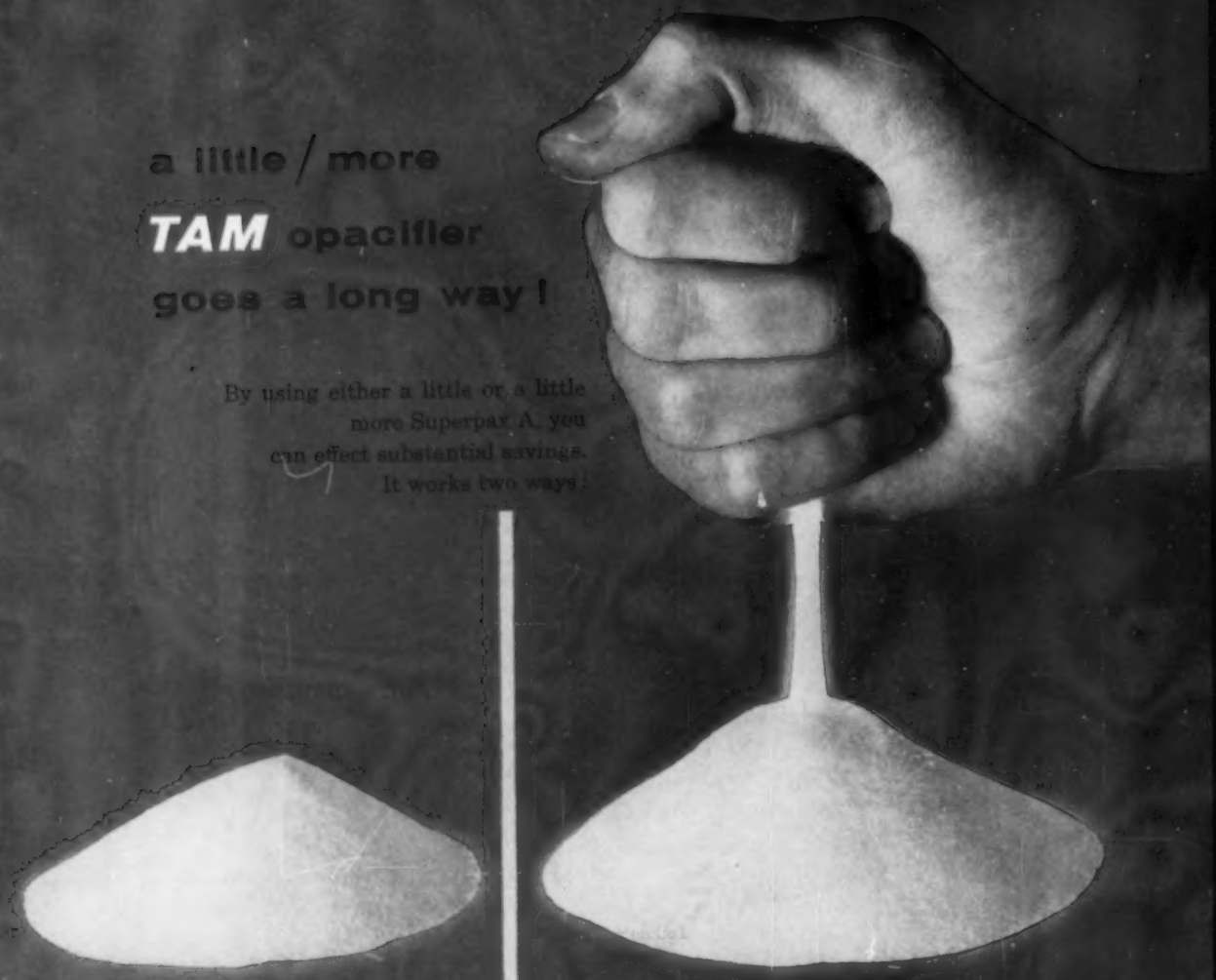
a little / more TAM opacifier goes a long way!

By using either a little or a little more Superpax A, you can effect substantial savings. It works two ways:



a little . . .

Using a lesser amount of Superpax A, you can obtain opacity equal to that of other brands. This means that your actual cost for Superpax A can be considerably lower than that for ordinary opacifiers.

a little more . . .

By using the extra hiding power of up to 50% more TAM opacifier than normal, it is often possible to reduce rejects by as much as 20%. This saving far exceeds the cost of the additional opacifier used.

IN EITHER CASE... you'll find it economical to use TAM opacifiers. Write our NYC office for detailed information on the complete line, try a sample run under your own conditions and take advantage of the cooperative service provided by our Ceramic Engineers in the field or laboratory.

TAM

DIVISION NATIONAL LEAD COMPANY

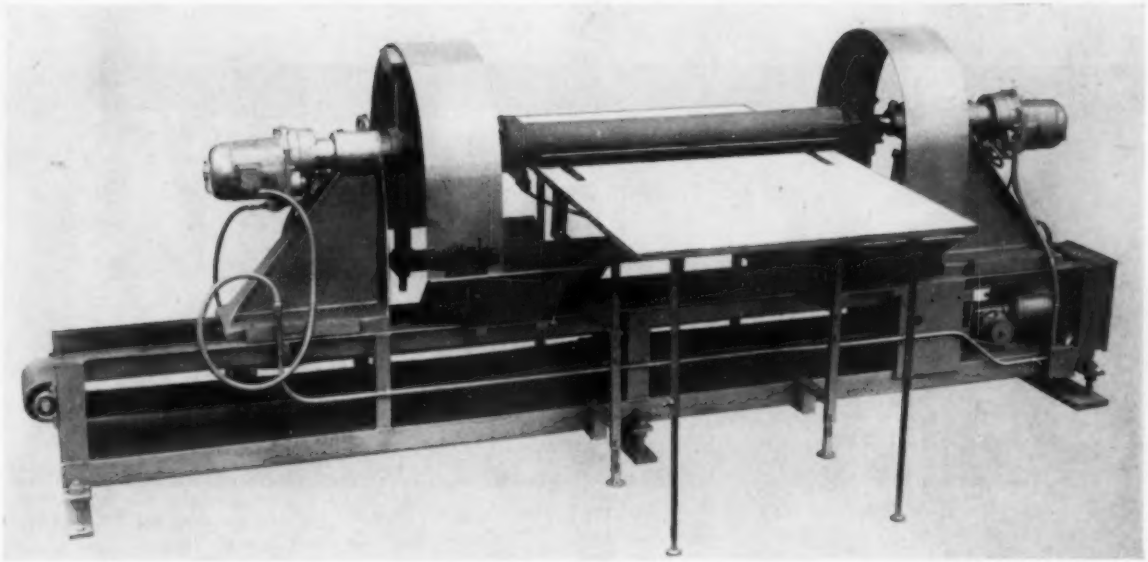
Executive and Sales Offices: 111 Broadway, New York City
General Offices, Works and Research Laboratories: Niagara Falls, N. Y.

TAM... the complete line

• SUPERPAX A • SUPERPAX • ZIRCOPAX • DOUBLE SILICATES • OPAX • OPAX S • TREOPAX

Pearne and Lacy

IMPROVED SEWER PIPE FINISHING MACHINE



This all new fully automatic Finishing Machine produces excellent finish rapidly and embodies many new features.

- Simplified alignment of trays
- Trays pivot concentrically with finishing head
- Pipe size changes are made easily and rapidly
- Scrap conveyor clears the machine clean
- Pipe remains cradled during entire finishing operation
- Concentric motor mounts assure perfect alignment

Heads adjust on machine bed for pipe lengths 2′ to 5′ and 4″ to 12″ diameter pipe. Operation provides for scarifying inside of socket and outside of spigot. Pipe lengths are cut to exact size. Various finishing head speeds available. Finishing heads available for both spigot and socket in all pipe sizes.

Write for details on the many new labor saving features in automatic handling and finishing equipment.

Engineers and Manufacturers of Automatic Handling and Finishing Equipment for the Ceramic Industry.

P.O. Box 3366, Terminal Annex,
Los Angeles 54, California **Phone: CU 3-1268**

Eastern Representative
Dwight B. Hendryx, 6621 Darlington Rd., Pittsburgh, Pa.

Circle Service No. 14

PEARNE AND LACY INC. MACHINE COMPANY

Circle Service No. 13

NEWS from Dow Corning

Helps You Sell Brick...

SILANEAL®

keeps brick clean

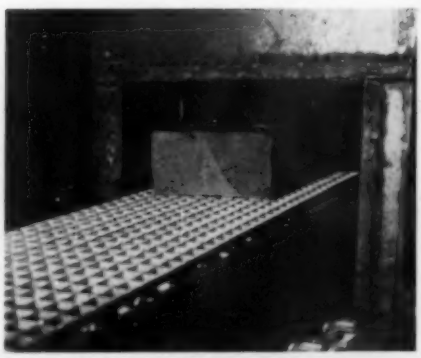
New low cost treatment protects brick from rain and stain

Silaneal® is the sodium siliconate treatment that makes brick water-repellent . . . minimizes efflorescence, keeps dirt on the surface where it rain-washes away. Silaneal keeps brick clean in storage . . . beautiful during and after construction. In short, Silaneal is a new "built-in" selling feature that helps you sell more brick . . . better brick!

Presold by Advertising

An industry-wide promotion carries the Silaneal story to architects, builders, contractors and owners. All important buying influences are reached again and again through a continuing series of 2-page color advertisements in such leading publications as *Architectural Record, Progressive Architecture, Building Construction Illustrated.*

And to help YOU cash in on the demand created by Silaneal advertising, Dow Corning has prepared the big variety of sales aids described on the facing page. Use them soon.



Silaneal treatment is inexpensive with new, low cost spray equipment specially designed by Dow Corning. Users find that Silaneal returns more than it costs — in reduced yard staining, expanded markets, happier customers! Now available — five minute sound-color film showing how Silaneal is applied with new spray equipment.

SILANEAL®
keeps brick clean

Dow Corning

Keeps Your Brick Sold!

Sales Aids For You

Imprinted Literature

To help you describe the advantages of *your* brick protected with Silaneal — a special 2-color, 4-page brochure . . . and an attractive 2-color envelope enclosure . . . imprinted with your company name at no charge.

Self Mailers

For your own direct mail program — mailing pieces also imprinted with your company name, featuring reprints of the Silaneal ads directed to architects and builders. Free.

"Tell 'n Sell" Stickers

Eye-catching 2-color pressure sensitive stickers on aluminum foil. Stick them to letters, sample brick panels and other promotional materials. Free.

Sound-and-Color Movie

"Better Brick Buildings"—a 14-minute, 16 mm documentary in full color—shows application of Silaneal at brick plant—sells Silaneal benefits! Arrange for a showing now.

Imprinted Sight Savers

"Best silent salesmen in sight"—imprinted on back with Silaneal trademark and your company name. Perfect for handouts and calling cards. Yours at nominal charge.

Technical Information

Dow Corning keeps you fully informed about all new developments in Silaneal processing methods and uses.

Inquiries Forwarded

Dow Corning Silaneal advertising brings valuable inquiries from "hot" prospects. These inquiries are promptly forwarded direct to brick manufacturers using Silaneal.

Get full details about Silaneal from any Dow Corning office. Write or phone today.

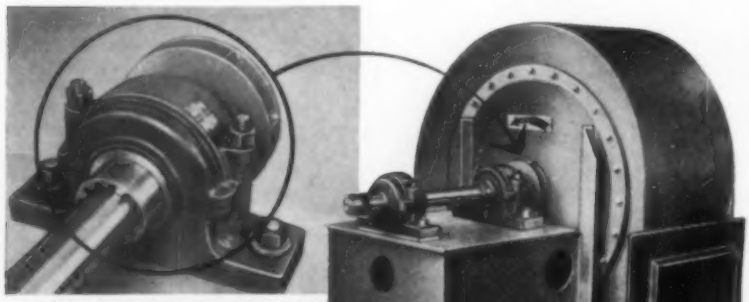
CORPORATION MIDLAND, MICHIGAN

SUSTAINING ASSOCIATE SCPI

Circle Service No. 15

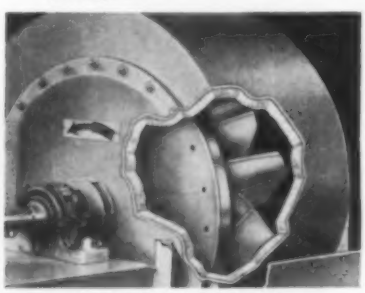
3 *outstanding features make this* ROBINSON EXHAUSTER

BEST for recirculating hot air in kilns—up to 1650°F.



1 Splined brass sleeve extends between bearing and shaft. Wheel mounted on shaft beyond bearing induces air through splines to provide integral, trouble-free cooling.

2 Cartridge type wheel assembly is removed from the drive side of the exhauster. Inspection and maintenance of both wheel and exhauster is simplified and speeded, without entering kiln.



3 Steel outer skin and alloy inner casing are separated by high-temperature insulating material, minimizing heat loss in kiln air, and reducing heat radiation and conduction to other parts.

Three unusual features—exclusive integral self-cooling, cartridge-type wheel assembly, and carefully engineered use of insulation and alloys—help Robinson High-Temperature Exhausters give unsurpassed efficiencies in recirculating hot air in kilns. These important features are the results of Robinson's long experience in improving air handling procedures in the ceramic industry's high temperature operations.

Because a successful kiln or dryer design depends heavily on proper air handling, Robinson engineers will work in a consulting capacity with your designers and builders. It is added assurance that you will get the most economical and efficient firing and drying facilities.

If you are building new facilities, or refurbishing existing ones, specify Robinson—for superior air handling matched to proper kiln and dryer design.
Write today for literature.

INDUSTRIAL FANS • BLOWERS • EXHAUSTERS

ROBINSON VENTILATING CO.

119 HENDERSON STREET, ZELIENOPLE, PA.

Circle Service No. 16

Letters

to the editor

Carter-Waters Article

Editor, BRICK & CLAY RECORD:
I want to express to you the thanks and appreciation of us here at Carter-Waters for the fine article in your August issue. I believe that in the not too distant future there will be a rather close tie between the haydite aggregate industry and the brick and clay industry centered around production of the new ceramic lightweight block. Our industry will supply the aggregate and yours the equipment, experience and knowledge in the molding and burning of clay products. It appears to me that this new type of block includes the best features of a standard lightweight concrete block and a burned clay products.

A. R. Waters, Executive Chairman
Carter-Waters Corp.

Serious Consideration

Editor, BRICK & CLAY RECORD:
Your editorial in November issue of Brick and Clay Record is very concise and to the point and certainly should receive serious consideration from the manufacturing and sales divisions of the industry.

The clay products industry has been very reticent in its approach to research and development of products either from a mechanical or artistic viewpoint. In another way of describing the situation they have produced some very fine products and continued to manufacture them until the demand was reduced to a degree that made it apparent that the buyer was not interested in their further use. Therefore they were not able to offer immediately a new product in either color, texture or size which would appeal to the architect or owner as their failure to constantly be alert in research development of new products had been neglected.

Anticipation of what may interest the buyer in the future and its development is the life blood of any industry and investigation will prove that successfully operated corporation's research work is continuous

as they develop new products far in advance and have them ready for the market.

For morale of a sales organization is definitely improved as they naturally enthuse over having something new to offer, while the employees of the manufacturer are usually much more interested in seeing development which means more consistent employment.

This letter is not critical of S.C.P.I. research as the above stated is in reference to the research on development which can be conducted by the individual manufacturer.

Geo. P. Anderson
Geo. P. Anderson, Inc.
Lansing 11, Mich.

Glorious Opportunity

As you can well imagine we thoroughly enjoyed "What's Happening to Clay Bonded Block" in the October issue of BRICK AND CLAY RECORD, including the slightly acid overtones in the piece.

We are just as strongly convinced that the block has great possibilities as we were when we reported to the 56th Annual Meeting in 1954. Although it has brought us very little R/D work we have continued to push the all-clay block because, as you put it—"this is a glorious opportunity for the brick industry."

John M. Neff, Director
Ceramics Research
Armour Research Foundation

BATCHMASTER

CONTROLS **H.K.PORTER PASCAGOULA PLANT**

3000 LBS BATCHED EVERY 5 MIN

This Howe Batchmaster® automatically controls batching of refractory brick mix from bin discharge to delivery of the mix at the presses in the new Pascagoula, Mississippi plant of the H. K. Porter Company, Inc.

One man operates the console, which combines ingredients from any of 60 bins and turns out repeat batches exactly alike. In brick production, the Batchmaster channels the mix through controlled mulling and automatic delivery to presses. In specialty production, it directs the ingredients to a drum mixer before bagging. The batch formula can be easily changed by turning ingredient dials.

The advantages of automatic batching—effective material control, improved product quality, increased production, lower production costs—can be yours, too. To learn how, write for your copy of the AUTOMATIC BATCHING HANDBOOK.

HOWE®

THE HOWE SCALE COMPANY
RUTLAND, VERMONT

Circle Service No. 17

An "under construction" peek at Ohio's newest CLIPPER KILN

This photo taken September 15, 1960 at the start of construction, shows the floater slab, kiln steel, and steel frame building. Construction of this unit for Rockford Brick and Tile, Rockford, Iowa is now complete and production is ready to start.

Here's how Rockford Brick and Tile Co. plans to increase quality-- boost production

For more information on how you can increase production and efficient operation, write or call . . . JU 2-2571, Granville, Ohio.

OHIO KILNS
GRANVILLE, OHIO • JU 2-2571

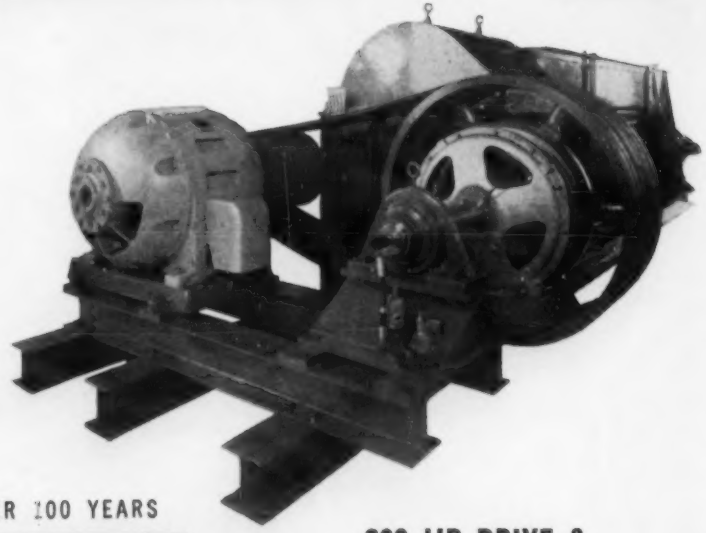
Circle Service No. 18

Chambers

No. 12 AC-HI-POWER MODEL

Built with modern materials new to the field, and with refinements to match 1960 engineering techniques, this great Chambers machine reflects the experience of tunnel-kiln operations, where breakdowns are intolerable. Shafts and gears are high alloy, 150,000 psi, steel; all barrel sections, adaptor and die holder are solid steel. All gears, helical-cut, flame-hardened steel, with a double reduction of Approx. 12:1. Centralized lubrication.

18¾" auger, fed by 21" augers in vacuum case. 12' pug mill tub. Point augers can taper to 16" or 13". These same efficient augers are available in the Chambers #212 with dual drives and optional vacuum pugging. Write for further details.



200 HP DRIVE & FAWICK AIRFLEX CLUTCH

Drive has short, efficient V-belts. Main clutch remote controlled; separate pug mill clutch. Totally self-contained mounting. Motor options up to 300 HP.

SERVING YOUR INDUSTRY FOR OVER 100 YEARS

CHAMBERS BROTHERS CO. 1857 1960

52nd & Media Streets · PHILADELPHIA 31, PA.

"Why, of course Santa can deliver You a Bickerstaff Fork* (with M-M)

you do have a chimney, don't you?"

Wire or write Santa in care of Bickerstaff and he'll get your Fork to you by Christmas morning. Better hide it when you get it though, or your employees will want to work with it on Christmas day!

* M-M MINIMUM MAINTENANCE ON ALL FORKS

Seriously, there are few gifts that you could give yourself and receive so many benefits . . . as you will with a Bickerstaff Fork. If you put your fork to work the day after Christmas and operate it through Dec. 30th, you'll see that these were the most profitable four days of brick handling you had all year.

FORK LIFT TRUCK ATTACHMENTS

REPRESENTATIVES THROUGHOUT THE U. S. AND CANADA

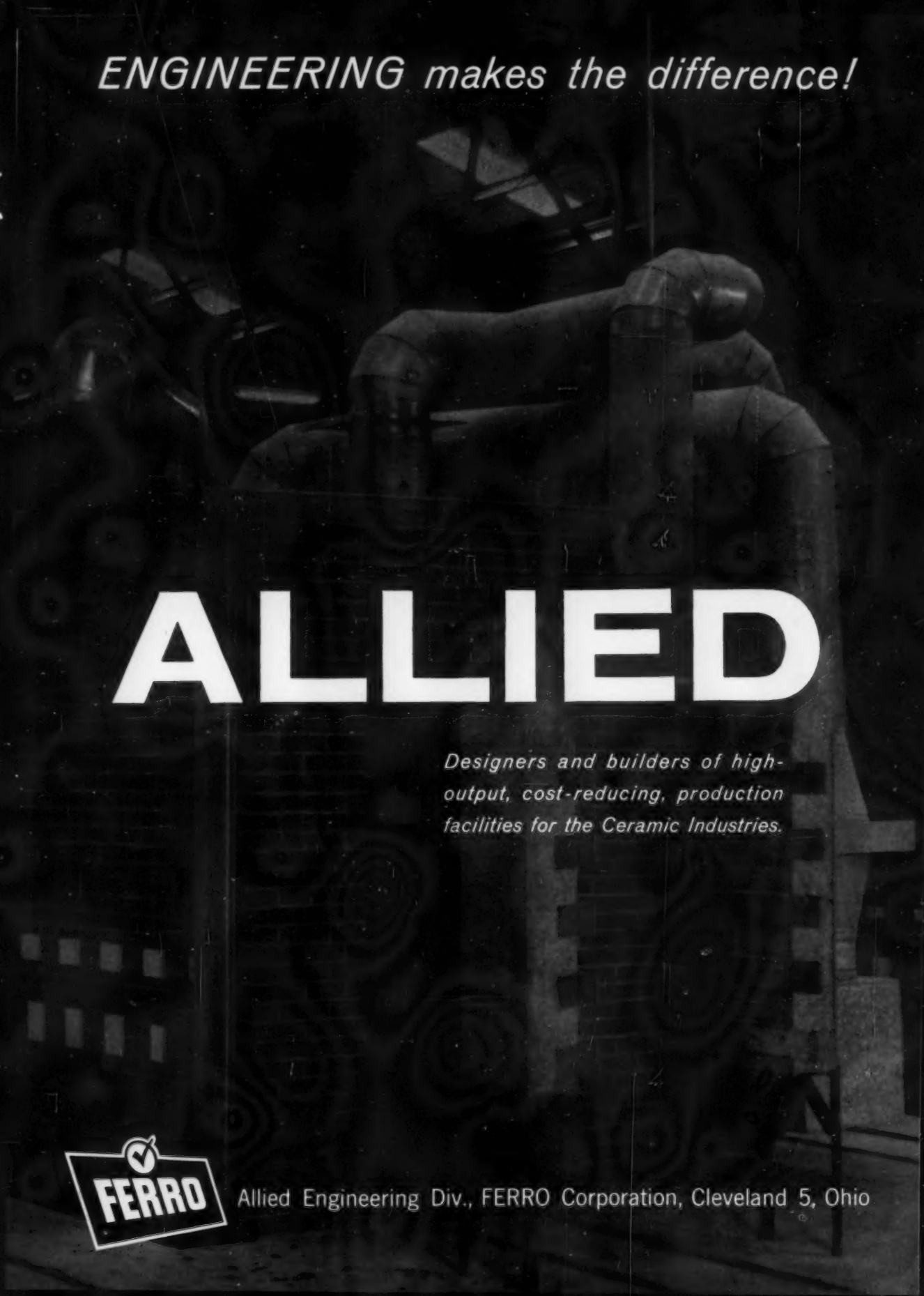
West Coast Representative - WALTER C. STOLL & SONS
5028 Alhambra Avenue, Los Angeles, California

BICKERSTAFF, INCORPORATED • P. O. BOX 1178, COLUMBUS, GEORGIA • CYpress 8-0455

Circle Service No. 20

Circle Service No. 21 ⟶

ENGINEERING makes the difference!



ALLIED

Designers and builders of high-output, cost-reducing, production facilities for the Ceramic Industries.

FERRO

Allied Engineering Div., FERRO Corporation, Cleveland 5, Ohio

13% increased output.

with lowered operating costs!

Wadsworth Brick and Tile reports B&W Insulating Firebrick kiln cuts 16 to 18 hours from 120 hour cycle... and reduces fuel costs 17%.

Accurate cost and operating figures, based on carefully weighed tests, have conclusively proved the superiority of B&W Insulating Firebrick to Wadsworth Brick and Tile Company, Wadsworth, Ohio. The B&W Insulating Firebrick lined kiln (shown at left) is providing increased output—an extra burn for every six —17% lowered fuel costs and higher quality output.

This kiln, formerly built of heavy firebrick, was completely rebuilt with a B&W K-20 IFB crown and sidewall and with B&W K-26 IFB behind the bagwalls. B&W IFB were selected for the rebuild as a result of Wadsworth's satisfaction with these brick in previous applications.

B&W Insulating Firebrick offer important savings to kiln operators because *they are the lightest insulating firebrick made.* Thus they offer the highest insulating value for the greatest fuel savings . . . lowest heat storage for fastest cycling and best temperature control.

For more information on the uses of B&W Insulating Firebrick in the structural clay products industry, write for Bulletin R-43 to The Babcock & Wilcox Company, Refractories Division, 161 East 42nd Street, New York 17, New York.

The arrow points to the Wadsworth kiln which is completely constructed of lightweight B&W Insulating Firebrick.

R-038

B&W

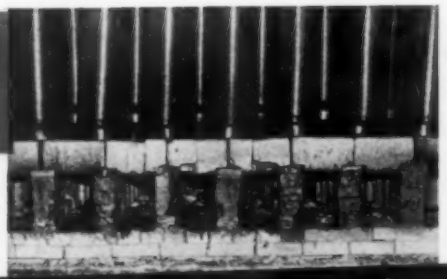
THE BABCOCK & WILCOX COMPANY

REFRACTORIES DIVISION

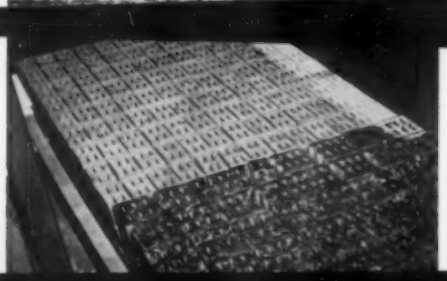
B&W Firebrick, Insulating Firebrick, and Refractory Castables, Plastics, Ramming Mixes, Mortars, and Ceramic Fiber.

Circle Service No. 22

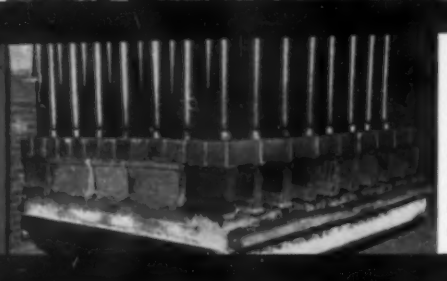
5 times the service life from Remmey SKC car blocks



Cartop design used by Pomona Terra Cotta prior to adopting the design of SKC girders and SKC cartop blocks recommended by Remmey. This design provided an average of 3 to 4 months service.



A car of old type cartop blocks (foreground) and a car of SKC cartop blocks (background) after both had been through the kiln a similar number of times.



Many types of refractory girders were tried on the ends nearest the burner but the additional cost was not justified and Pomona has now standardized on SKC girders.

A new car at Pomona Terra Cotta showing their standardized design using SKC girders and SKC cartop blocks. A good solid design that gives as much as 5 times the service formerly obtained.

Pomona Terra Cotta Co., Gulf, North Carolina reports that prior to their usage of SKC Car Blocks, the maximum service they had ever obtained was 4 months. Failure was due to very bad cracking resulting in car wrecks, shut downs and damaged sewer tile. SKC Car Blocks average 18 months service—as much as 5 times the life of competitive clay blocks.

Cut your production costs... Write or call

RICHARD C. REMMEY SON CO.
400 Hedley Street, Philadelphia, Pa.

MANUFACTURERS OF SPECIALIZED REFRACTORIES...

A Subsidiary of A. P. Green Fire Brick Company

REMMEY

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Simply circle the number corresponding to the advertisement or product number on the card. Mail the card and we will do the rest. You may circle as many numbers on one card as you wish.

Use this valuable service to obtain complete information about the many products available to you. Send us one card now and save the second card for later use.

Brick & Clay Record

5 So. Wabash Ave.

Chicago 3, Illinois

1	13	25	37	49	61	73	85	97	109	121	133	145	157	169	181
2	14	26	38	50	62	74	86	98	110	122	134	146	158	170	182
3	15	27	39	51	63	75	87	99	111	123	135	147	159	171	183
4	16	28	40	52	64	76	88	100	112	124	136	148	160	172	184
5	17	29	41	53	65	77	89	101	113	125	137	149	161	173	185
6	18	30	42	54	66	78	90	102	114	126	138	150	162	174	
7	19	31	43	55	67	79	91	103	115	127	139	151	163	175	
8	20	32	44	56	68	80	92	104	116	128	140	152	164	176	
9	21	33	45	57	69	81	93	105	117	129	141	153	165	177	
10	22	34	46	58	70	82	94	106	118	130	142	154	166	178	
11	23	35	47	59	71	83	95	107	119	131	143	155	167	179	
12	24	36	48	60	72	84	96	108	120	132	144	156	168	180	

NAME _____ TITLE _____

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3	15	27	39	51	63	75	87	99	111	123	135	147	159	171	183
4	16	28	40	52	64	76	88	100	112	124	136	148	160	172	184
5	17	29	41	53	65	77	89	101	113	125	137	149	161	173	185
6	18	30	42	54	66	78	90	102	114	126	138	150	162	174	
7	19	31	43	55	67	79	91	103	115	127	139	151	163	175	
8	20	32	44	56	68	80	92	104	116	128	140	152	164	176	
9	21	33	45	57	69	81	93	105	117	129	141	153	165	177	
10	22	34	46	58	70	82	94	106	118	130	142	154	166	178	
11	23	35	47	59	71	83	95	107	119	131	143	155	167	179	
12	24	36	48	60	72	84	96	108	120	132	144	156	168	180	

NAME _____ TITLE _____

COMPANY _____

STREET _____

CITY _____ ZONE ___ STATE _____

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Brick & Clay Record
5 So. Wabash Ave.
Chicago 3, Illinois

Fast-hauling Michigan Scraper has cut bank-to-stockpile clay supply cost in half.

Michigans help Cherokee Brick slash costs of clay supply

At plant, fast-moving Michigan Tractor Shovel spreads rail-delivered clay in thin layers.

Clay, thin-cut over length of drying area, is dumped into batcher 2¼ cu yds at a time.

Reverse pass automatically lowers bucket scarifier teeth, rips sun-baked clay.

Considering the many years brick and clay people have used scrapers and tractor shovels, you'd think any savings gained with these machines would today be insignificantly small.

Not so—at least at Cherokee Brick & Tile Company, Macon, Georgia, it's not so.

Scraper operation educed from 32.4¢ to 16.1¢ per yd

Down in their 1200 acre riverside pit, Cherokee has a 19 yd Model 210 Michigan Tractor *Scraper*. Its speed, ease of loading and lower repair needs have cut costs from 32.4¢ per bank yard, obtained with self-propelled pans previously used, to 16.1¢ per bank yard.

One machine replaces two on plant feeding assigment

Two miles away, a fast-moving 127 hp, four-wheel-drive Model 125A Michigan Tractor *Shovel* feeds the plant. Equipped with a 2¼ yd bucket, it does more work than the 1¼ yd and 1⅜ yd loaders it replaced. Its assignments include (1) distributing and dozing clay delivered 48 yds at a time by dump-type rail cars . . . (2) scarifying the dry clay (with retractable bucket teeth) for easier pickup . . . (3) delivering both bank-run and special stockpiled clays to preparatory equipment. From this material, Cherokee makes some 202 different kinds of bricks, tile, etc. In 1959, they shipped an average of 807 tons *per day*—the equivalent per day of 360,000 eight-inch bricks.

Speed eliminates costly winter work

Besides the dramatic cost reductions thus obtained, the Michigan Scraper's great speed and dependability enable Cherokee to remove all overburden and gather and blend each year's supply of clay in only seven or eight months of dirtmoving work. Total yardage: about 250,000 yds per year. Scrapers no longer have to operate in winter with its problems of more moisture and more "clumping" of the clays. The Michigan, on typical 2,000 ft cycles, hauls a scale-weighed average of 14.6 bank yards per load, makes 12 to 14 trips per 50-minute hour. Other self-propelled units, formerly used, averaged respectively 10.8 bank yards per load, 9 to 10 loads per hour . . . and 8.2 bank yards per load, 12 to 14 loads per hour. Their output: about half that of the Michigan.

"Easy operating boosts output"

"Another big Michigan advantage," says A. Harry Vaughan, Cherokee vp and general manager, "is ease of operation. Power steer and power shift really help boost production—especially at the end of the day."

Prove it for yourself. We'll be glad to demonstrate a Michigan Tractor Scraper—or Tractor Shovel—or Tractor Dozer on your job. Any time!

Circle Service No. 24

Michigan is a registered tradesmark of

CLARK EQUIPMENT COMPANY
Construction Machinery Division

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News of the INDUSTRY

Build Fallout Shelter at Nebraska Fair

Richard Gyhra, (left), of Omaha, Nebr., a bricklayer tender; Carmel Quinn (center), noted Irish singer on Arthur Godfrey program and J. W. Kraus, field representative for the Structural Clay Products Institute are shown working on the clay masonry fallout shelter which was constructed during the recent Nebr. State Fair at Lincoln, Nebr. Labor and materials for the fallout shelter were donated by the Nebr. State Conference of Brick Layers, the SCPI, Region 6, and participating brick manufacturers.

Fine Promotional Tools

"Man and Masonry" and the "SCPI Residential Film Package" are two of the finest promotional tools our industry has ever had. The reaction of the architects, home builders, the union and even our competitors is extremely gratifying.

SCPI Sales Engineer Training Classes Dates Announced

The SCPI has announced the starting dates for its forthcoming sales engineer classes, January 9 to February 16, 1961 and February 20 to March 24, 1961. Registration deadlines for the two classes are December 15, 1960 for the January 9 class and January 30, 1961 for the February 20 class.

New High-Bond Mortar Under Development

A new high-bond mortar which could reduce clay masonry walls to half their current thickness and provide even greater structural strength is under development by the Structural Clay Products Research Foundation and the Dow Chemical Co.

Preliminary tests to date indicate that the new mortar increases mortar-brick bond strength more than five times. For example, a 4-inch brick wall with standard mortar, tested on a five-foot vertical span, will withstand a uniform horizontal force of 50 lbs. per sq. ft. Identical walls built with the new high-bond mortar have withstood horizontal forces in excess of 250 lbs. per sq. ft., whether the wall is wet or dry.

Housing Starts in '61 Will Top '60 by 4%

The government predicted private home building next year will advance a modest 4% over 1960 disappointing pace.

The Commerce Dept. said it thinks work will be started on 1,300,000 private homes in 1961, compared with a scaled down target of 1,250,000 farm and non-farm starts for all of 1960. Officials said this forecast assumes a "strong recovery" in the latter half of 1961.

17th Annual NAHB Convention Set For Chicago

The largest convention and exposition in the history of the light construction industry will begin on January 29, 1961 in Chicago, Ill., when the National Association of Home Builders opens its 17th Annual Convention and Exposition in Chicago's mammoth new exposition center, McCormick Place.

Over 500 manufactures have already reserved space for this five-day show and by the time the show opens, it is expected that all of the 137,000 sq. ft. of exhibit area will have been assigned. This will be an increase of more than 50% over any previous year.

Acme Brick Contributes $1,000 To College Fund

The Acme Brick Co., of Fort Worth, Tex., has contributed $1,000 to the Ark. Foundation of Associated Colleges for the 6th consecutive year. Martin Borchert, Acme's Little Rock division sales manager made the presentation to Col. Cletos O. Bennett, secretary-treasurer of the Foundation.

Dickey Adds T. H. Kalencki To Staff at Meridian

Ted H. Kalencki has been appointed district engineer by the W. S. Dickey Clay Mfg. Co., with headquarters in Meridian, Miss., according to Lee Campbell, Meridian plant manager.

Kalencki will provide technical assistance to consulting engineers, contractors and municipal officials in the Meridian plant sales area which includes the states of Miss., and La., east of the Miss. River.

Spinks Clay Buys St. Louis Plant

H. B. Spinks Clay Co., of Paris, Tenn., has announced it has purchased the Hayes Adhesives Co. of St. Louis and plans a major expansion into its market field.

The entire Hayes plant in St. Louis will be moved to the Spinks site.

R. B. Carothers Jr. vice president of the Spinks firm said he did not know at this time how far the expansion program will go.

The company plans to manufacture adhesive floor tile and other products.

Sales Manager Named For Dallas Office Of Acme Brick

John Doughty has been named division sales manager for the new Dallas division sales office of the Acme Brick Co.

Doughty will direct all company sales for the Northeastern Texas area. Jack Putnam, former Dallas branch manager, has been transferred to Acme's general offices in Fort Worth, Tex. Doughty formerly was division sales manager for Acme in Kan. He has been with the firm since 1949.

Expansion Scheduled For Clay Products Plant

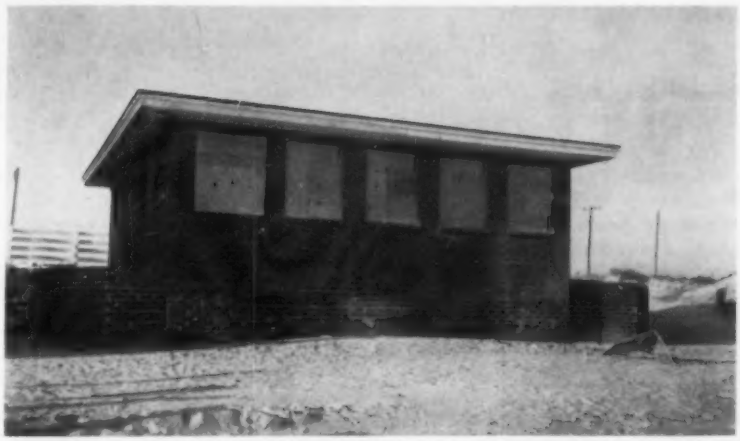
A $160,000 modification and expansion program will start early next year at the Saskatchewan Clay Products plant in Estevan, Sask.

The program, when completed, will incorporate the latest technical advances in drying and firing facilities and will increase the plant's capacity by 10%.

Work on the program is expected to begin early in January and is scheduled for completion within three months.

SCPI Offers Booklets On Structural Clay Products

The SCPI has available for distribution to architectural and engineering students copies of the "Instructor's Guide for Structural Clay Products", and the students's manual, "Principles of Clay Masonry Construction". SCPI's engineering dept. has contributed substantial sums of money toward the development of these publications, therefore, SCPI is able to offer the Instructor's Guide free, and the Student's Manual at 75 cents per copy.



In October 1957 a "hurricane house" was built at Atlantic Beach by the Brick and Tile Service, a small trade association of N. C. brick manufacturers. It was set deliberately at the very edge of the beach, open to the smashing pile-driver blows of the heavy seas and hurricane winds. Its sponsors wanted a hurricane to hit it squarely. Hurricane Donna did. Shown is the front of the RBM (reinforced brick masonry) experimental house. It is intact, except for the window glass which was blasted out by the high winds of the hurricane. This is but an example of what good construction will stand when properly constructed.

Acme Brick Names General Manager of Operations

Acme Brick Co., has named Burnette Henry general manager of operations. Henry comes to Acme from the United States Gypsum Co., plant at Houston. He has been associated with United States Gypsum since 1946, his last position being works manager of that company's new twenty million dollar Houston plant.

Annual Clay Products Student Scholarship Awards Announced

Paul E. Pate of Eastland, Tex., has been awarded the first prize of $500 in the Annual Clay Products Student Scholarship Awards. Pate won his award on the basis of excellence of his fourth year work as an architectural student at Texas A & M College.

Other winners were Keitt C. Barkley of Houston, Tex., architectural student at the Univ. of Houston; James S. Dalet of Lindsay, Okla., architectural student at Okla. State Univ.; J. B. Harrison of Tulsa, Okla., architectural student at the Univ. of Okla.; and Emil Golla of San Antonio, Tex., architectural student at the Univ. of Tex., who each received $100 awards for their work.

These students were selected for their excellence of their work by their respective schools. Their work was then submitted to the Texas Architectural Foundation to be judged by a committee of practicing architects at the Texas Society of Architects annual convention held this year in El Paso, Tex.

New Sewer Pipe Plant Under Construction

The Goodwin Co. is building a sewer pipe plant in Des Moines, Ia. The facility will be completely new and on a recently zoned industrial site adjacent to interstate highways Nos. 35 and 80. The plant will have a 100 ton a day capacity and is expected to be completed and in production before the end of 1961.

Tunnel Kiln Now Operating At Evens and Howard Plant

A new Swindell-Dressler tunnel kiln has been completed and is now in operation at the Evens and Howard plant of the W. S. Dickey Clay Manufacturing Co., St. Louis, Mo., according to John J. Steenken, general manager. The kiln, the first of its kind to be used by Dickey, will allow the firm to expand substantially its manufacturing and distribution of Dickey plastic compression couplings, and particularly the 12-inch pipe and smaller sizes. Flue linings, meter boxes, and fittings will also be produced.

(*More News on Page* 24)

News of the Industry

(Continued)

Bonnot Co. Appoints Chief Engineer

Appointment of Joseph Bregger as chief engineer of the Bonnot Co., was recently announced. In addition to product development for clay processing equipment, Mr. Dregger's design activities will include mixing, pelletizing and extrusion equipment for the chemical, plastics, mineral, steel and food industries.

The Bonnot Co., is an operating division of the C. L. Gougler Machine Co., Kent, Ohio.

Pemco Corp. Promotes Glenn McClelland

Pemco Corp., has promoted Glenn McClelland to the post of plant engineer, it was announced by Richard Turk III, vice president for manufacturing.

McClelland has been Pemco since 1955 as an engineer. Prior to that time, he was connected with the bureau of building construction for the city of Baltimore.

Commercialores Announces Carolina Kyanite Distributors

John Strohl, President of Commercialores, Inc., Clover, S. C., has announced that they will offer improved service to their midwestern and far western customers.

For economy and convenience in handling L.C.L. shipments, high grade Carolina Kyanite and Mullite are being warehoused at Parson's Coal Co., East Liverpool, Ohio, and distributed on the west coast by the W. P. Keith Co., Santa Fe Springs, Calif.

Streator Clay Pipe Co. Appoints New Vice-president

Ray G. Rinehart has been appointed vice president and assistant general manager of the Streator Clay Pipe Co., Streator, Ill., recently acquired by James B. Clow & Sons, Inc.

Company Finds Two Clay Deposits On Property

The Nebraska City Brick and Tile Co., owned and operated by the Abel Investment Co., has started operations in their new modern electronic brick plant in Nebraska City, Neb.

The push-button operation in the block long tunnel kiln is building up to a production of 80,000 bricks each day.

Plans are underway for an expansion in building and grain tile to meet the demands in the midwest area.

Actual value of the company's investment and production have not been made public, but big business is evident in this installation.

The investment firm purchased the old Western Brick and Supply Co., in 1958. The former owners were in limited production using the old beehive kilns in the yard founded in 1890.

Shortly after the site was purchased the company discovered two new veins of clay (in bluffs adjacent to the plant)—buff and pink veins in addition to the old red vein. According to reports the supply is very abundant, with very good working properties.

New grinding, clay preparation and storage facilities were installed and production was started in the old kilns.

Then work was pushed on the new 384-foot continuous tunnel kiln which the company has recently put into operation. It is housed under a prestressed concrete building that is 500 ft. by 286 ft.

The plant, located on the Missouri River bank just south of the Nebraska City Bridge, has railroad, highway and river barge transportation at its doorstep.

A. S. Harries To Pittsburgh Refractories Sales Office

Alfred S. Harries has been appointed refractories sales representative for the Pittsburgh district sales office of the Babcock & Wilcox Co., according to M. J. Terman, Refractories division general sales manager.

Harries has been associated with B & W since 1933 when he joined the company's Augusta, Ga., refractories plant as an apprentice bricklayer. In addition to manufacturing experience, Harries has supervised refractories installations throughout the United States as well as the construction of kilns in England.

New Technical Services Specialist Appointed

Richard N. Ames has been appointed technical services specialist for Kaiser Refractories & Chemicals Division with headquarters in the Chicago area.

In his new duties, Ames will be working closely with the steel industry on refractory problems. In addition, he will be gathering information which will assist Kaiser Refractories in the development of products especially designed to achieve higher performance in steel applications.

(More News on Page 26)

SCPI and VI Hold Symposium

The Structural Clay Products Institute and the Vermiculite Institute recently sponsored a symposium on "Clay Masonry Insulated Cavity Walls". Three of the symposium speakers (l to r), Edward R. Murphy, Managing Director, Vermiculite Institute; C. T. Grimm, Manager, Architectural and Engineering Dept., Zonolite Co., and Harry C. Plummer, Director, SCPI Engineering and Technology Dept.

At North American Refractories Company, Curwensville, Pa. Plant . . . .

One man does the work of four with BOYD SHAPE-O-MATIC

When Shape-O-Matic came in . . . laborious hand molding started its way out at Curwensville.

In addition to producing *four* shapes in the same time it takes to hand mold *one,* this economical, pneumatically powered compacting press now frees North American's Boyd production presses from the die changes necessary for short runs on special shapes.

Quality? North American reports that shapes produced on Shape-O-Matic are comparable in *every way* to dry pressed refractory brick . . . in density, strength and green properties.

Want to cut *your* costs on special shapes . . . yet make better and more stable brick, faster? North American did—so can you!

Write for details on Boyd SHAPE-O-MATIC.

Above:
Jim Heitsenrether stacks radius brick direct to kiln car from Boyd **Shape-O-Matic** at Curwensville, Pa., fire brick plant of North American Refractories Co.

CHISHOLM, BOYD & WHITE COMPANY
SUBSIDIARY OF WEHR STEEL COMPANY
610 W. 57th STREET CHICAGO 21, ILLINOIS

BOYD POWER PRESS

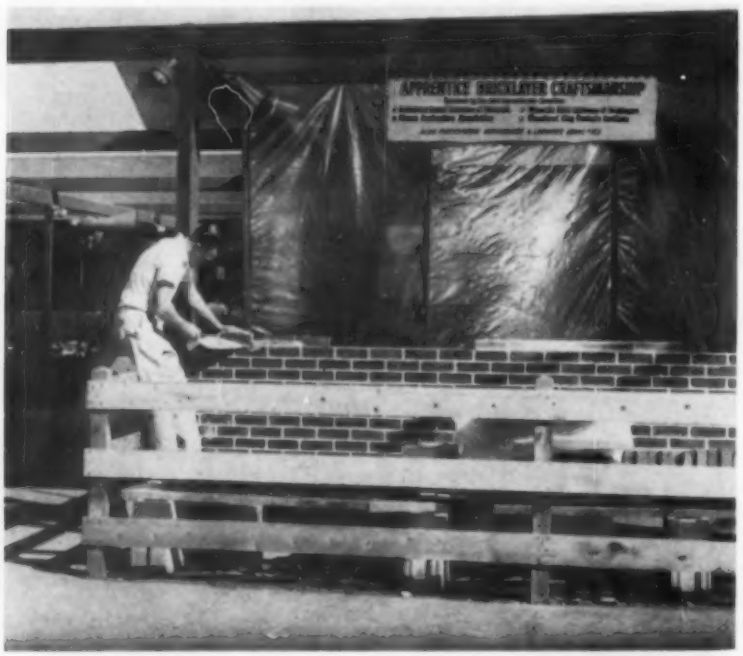
1160

Circle Service No. 25

Expanded Shale, Clay and Slate Institute Elects

Officers for the Expanded Shale, Clay and Slate Institute elected at the Eighth Annual Meeting, Oct. 10-14, are (l to r) James M. Chandler, Chandler Materials Co., Tulsa, Okla., treasurer; Cedric Willson, Texas Industries, Inc., Dallas, Tex., president; Lester R. Kennedy, Light Aggregates, Inc., Rapid City, S. Dak., secretary; and Ben F. Park, Buildex, Inc., Ottawa, Kans., 2nd vice president. Not included in the photograph is Leroy A. Thorssen, consolidated Concrete Industries, Ltd., Calgary, Alta.

Bricklayer Apprentice Performs at Fair



Bricklayer apprentice skills were exhibited at the Minnesota State Fair August 27 to September 5. Over one million persons attended the fair and had the opportunity to watch Dan Denissen, bricklayer apprentice, lay up two glazed brick panels. These panels are now permanent walls of the new AFL-CIO House of Labor building now located on the fair grounds.

BCR To Sponsor Clay Block Meeting, March 23 and 24

The second clay block conference to promote the manufacture of a bonded clay block will again be sponsored by the BRICK & CLAY RECORD and will be held in Chicago at the Palmer House on March 23 and 24, 1961.

The conference will feature panel discussions by some of the leading manufacturers of clay block. The types of aggregate to use will be discussed, as will proper methods for forming the block and the setting up of a production line for drying and firing of the block. Methods of glazing the block will also be discussed and a panel of architects and contractors is being chosen to discuss the potential uses of a product of this kind.

In addition to the clay block discussions, one session will be devoted to the prefiring of clay.

Speakers are now being scheduled for the meeting and further details will be announced in the January issue of BRICK & CLAY RECORD. Reservation cards will be mailed to all clay products producers in the near future.

OBITUARIES

Elmer W. McClave Sr.

Elmer W. McClave Sr., 67, secretary-treasurer of the Superior Clay Corp, and the Peerless Clay Corp., of Toronto.

John Goodridge

John Goodridge, 64, president, Illinois Brick Co., Chicago, Ill. He was also a director of the City National Bank and Trust Co., of Chicago and a member of the advisory board of Lumberman's Mutual Casualty Co.

C. Chester Small

C. Chester Small, 63, secretary-treasurer of Louisville Fire Brick Works, Louisville, Ky. on November 9 in Louisville.

Joseph R. Rhodes

Joseph R. Rhodes, vice president and general sales manager, Refractories Division, Gladding McBean & Co. on November 4. Rhodes had been with the Company since 1927.

SCPRF News

The first major application of the "SCR building panel"* was completed during the last week of October, when 27 large (4 ft. by 19 ft.) plate girder sections of the panel were welded into place on the building frame in three and half days. The large panels form a 19 ft. high folded plate wall which, despite its 2½ in. thickness, will carry the wind loads over a 16 ft. vertical clear span.

Add the on-the-job cost saving features of the "SCR masonry process"** to the inherent economies of "SCR brick"*** construction and we have a combat team hard to beat. Bill Houk, SCPI regional director in Seattle has been doing just that. Being located in the heart of the lumber producing industry, the successful promotion of brick homes in Region 17 is not easy job. In Salem Ore., a frame house builder, through the efforts of Bill Houk and Norm Brunberg of SCPI, built his first "SCR brick" house, using the "SCR masonry process". The cost was such that he could offer it for sale at a price very little over that for a comparable frame home. It was sold before it was completed, at a time when the same builder's frame homes of equal size and quality were not moving.

Research is important to the survival of any business, but its results must be used.

R&D Program on Block

SCPRF has a cooperative research and development program under way with a leading manufacturer of presses. The goal of this program is the development of an economical lightweight pressed clay block. Progress to date is most encouraging.

The four officers of the Structural Clay Products Research Foundation who headed the organization during the past year were re-elected at the Foundation's recent annual meeting. A. C. Frisk, President of the Mason City Brick & Tile Co., Mason City, Ia., was re-elected Chairman for 1960-61. D. J. Renkert, President of the Metropolitan Brick, Inc., Canton, O. was re-elected Vice Chairman of SCPRF. The re-elected Secretary is Harry C. Plummer, Director of Engineering and Technology for the SCPI, Washington, D. C. William G. Temple, President of the Denver Brick & Pipe Co., Denver, Col., was renamed Treasurer. Robert B. Taylor is Director of SCPRF with headquarters at the laboratories in Geneva, Ill.

*Reg. U.S. Pat. Off., SCPRF
**Reg. T.M., Pat. Pend., SCPRF
***Reg. U.S. Pat. Off., Pat. Pend. SCPRF

12 Brick and Tile Men Complete SCPI Sales Course

Evans

Williamson

Robinson

Dubberly

Newman

Ickes

Roth

Bickerstaff

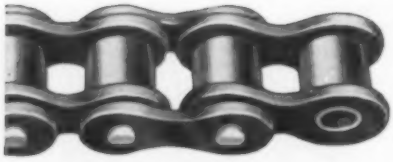
Prout

Hickenlooper

Tallevast

Creighton

Twelve brick and tile industry men have completed the 27th Sales Engineer Training Class at the Structural Clay Products Institute. In the largest class SCPI has graduated to date, three of the men are sales representatives of brick manufacturing firms and nine are field representatives and engineers for SCPI, either national or in the regions. Three of the men are located in the Washington, D. C. area. They are: Thomas H. Creighton III, SCPI headquarters; Lewis J. Dubberly, SCPI headquarters, and Giles L. Evans Jr., of the Masonry Institute, Inc. Other graduates of the class are: Sherwood Bickerstaff, Bickerstaff Clay Products Co.; David B. Hickenlooper, Facing Tile Institute; Carl E. Ickes, Malvern Flue Lining, Inc.; Bobby A. Newman, Clay Products Association of the Southwest; Hedley J. Prout, SCPI Region 3, with offices in Philadelphia; John G. Robinson, SCPI Region 3, with offices in Philadelphia; Carl F. Roth, SCPI Region 5, with offices in Chicago; Cecil J. Tallevast Jr., Boren Clay Products Co., Wayne Williamson, SCPI Region 5, with offices in St. Louis.



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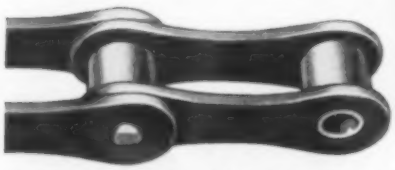
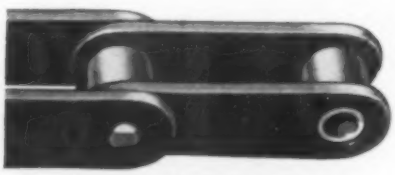
DOUBLE STRAND

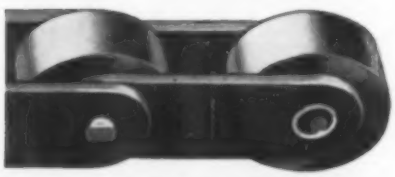
SINGLE STRAND, HEAVY SERIES



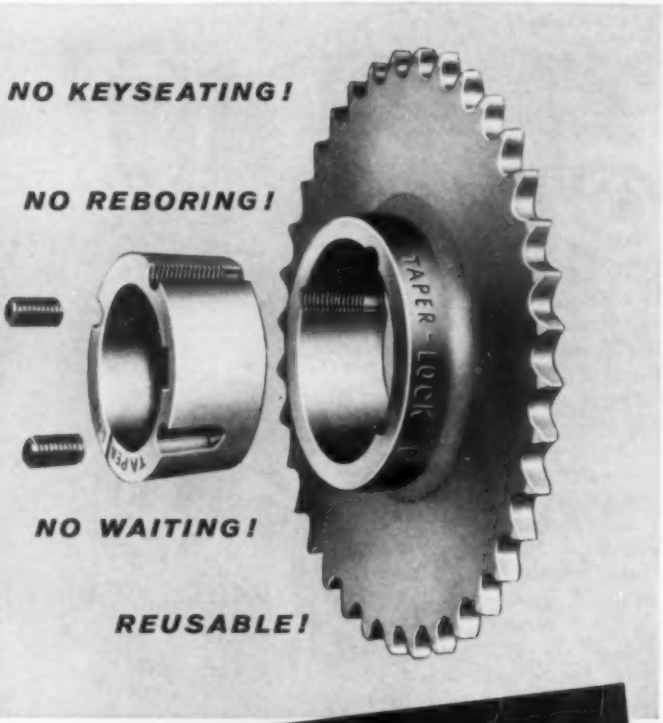
DOUBLE PITCH TRANSMISSION



DOUBLE PITCH CONVEYOR



DOUBLE PITCH CONVEYOR, LARGE ROLLERS



TAPER-LOCK SPROCKETS DODGE ROLLER CHAIN

DODGE Quality Roller Chain, teamed with Dodge Taper-Lock Sprockets, results in chain drives and chain conveyors that have the precision, efficiency and stamina necessary for the real economy of *long life*.

Moreover, Taper-Lock's reusable bushing makes a difference in overall cost. The ease of Taper-Lock mounting, the elimination of reboring, keyseating, and wasted time, add to the saving. Precision machining and true articulation lengthen the life of *both* sprocket and chain.

The Dodge line of chain, including standard attachments, is extensive. It meets a high percentage of all chain requirements.

In the Double Pitch series (both Transmission and Conveyor) the sizes which require special spacing for perfect tooth action are offered from stock in special double pitch design — to double the life of the chain and the sprocket!

Ask your local Dodge Distributor. Or write us for bulletin.

DODGE MANUFACTURING CORPORATION, 4900 Union St., Mishawaka, Ind.

CALL THE TRANSMISSIONEER—your local Dodge Distributor. Factory trained by Dodge, he can give you valuable help on new, cost-saving methods. Look under "Dodge Transmissioneer" in the *white* pages of your telephone directory, or in the yellow pages under "Power Transmission Machinery."

DODGE
of Mishawaka, Ind.

Circle Service No. 26

This 2 Pass LANLY Conveyorized Oven Cures Plastisol Joints on

Heat Processing Engineers for the Ceramic Industry

The plastic material is applied to the preheated pipe after it leaves the first pass of the oven and is cured in the second pass.

The rapidly expanding production of vitrified pipe with plastisol joints is being greatly expedited by the installation of LANLY ovens in various plants throughout the country manufacturing this product.

NEW BULLETIN 572
Covering Refractory, Sanitary Ware and Vari-Purpose Dryers is yours for the asking.

Manufacturers Using LANLY Equipment for Preheating Clay Pipe and Curing Plastisol Pipe Joint Compound.

American Vitrified Products Co. • Clay City Pipe Co. • W. S. Dickey Clay Co. • Gladding, McBean & Co.
Evans Pipe Co. • Graff-Kittanning Clay Products Co. • Larson Clay Pipe Co. • Logan Clay Products Co.
Ozanne Clay Products Co. • Panama Terra-Cotta Co. • Robinson Clay Products Co. • Stillwater Clay Products Co.
Streator Drain Tile Co. • Superior Clay Corp. • Tillotson Refractories Co. • Utah Fire Clay Co.

Find Your Nearest Dealer In The Yellow Pages

THE LANLY CO.
CERAMIC OVENS & DRYERS
2800 Euclid Avenue • Cleveland 15, Ohio

THE LANLY CO.
CERAMIC OVENS & DRYERS
2800 Euclid Ave., Cleveland 15, Ohio

Name_____

Company_____

Street_____

City_____ State_____

Atlanta, Georgia • Birmingham, Ala. • Boston, Mass. • Chicago, Ill. • Cleveland, Ohio
Columbia, So. Carolina • Columbus, Ohio • Detroit, Mich. • Houston, Texas
Pittsburgh, Pa. • Rochester, N. Y. • San Francisco, Calif. • St. Louis, Mo.

Circle Service No. 27

Varco Buildings for the Brick and Clay Industry . . .

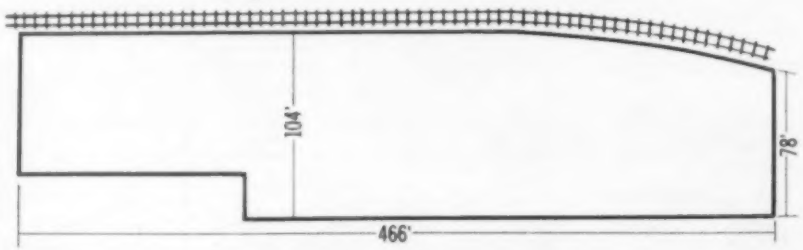
Curved Building Provides NORTH AMERICAN REFRACTORIES with Maximum Storage Space

North American Refractories had a problem at their Curwensville, Pa., plant. They needed a new storage building and they wanted to erect it on an existing area of the plant which was already bordered by a railroad siding. Curvature of the siding made a conventional building impractical, since a structure designed to accommodate the narrowest section of the area would result in a large wasted space at the wider end.

Varco engineers found the solution. They designed a curved building which followed the course of the railroad siding and gave North American maximum storage space in the available area. The building as shown on the diagram, measured 104 feet at the widest point, 78 feet at the small end. Ten different size rigid frames were required in its construction.

You probably won't need a curved building, but Varco can give it to you if you do. We are in business to serve your building needs, whatever they may be. We can design, fabricate and erect any structure required for Brick and Clay plants.

More Varco Buildings are being erected than any other type in your industry. There's a reason why: Varco builds it better . . . for less.



Varco

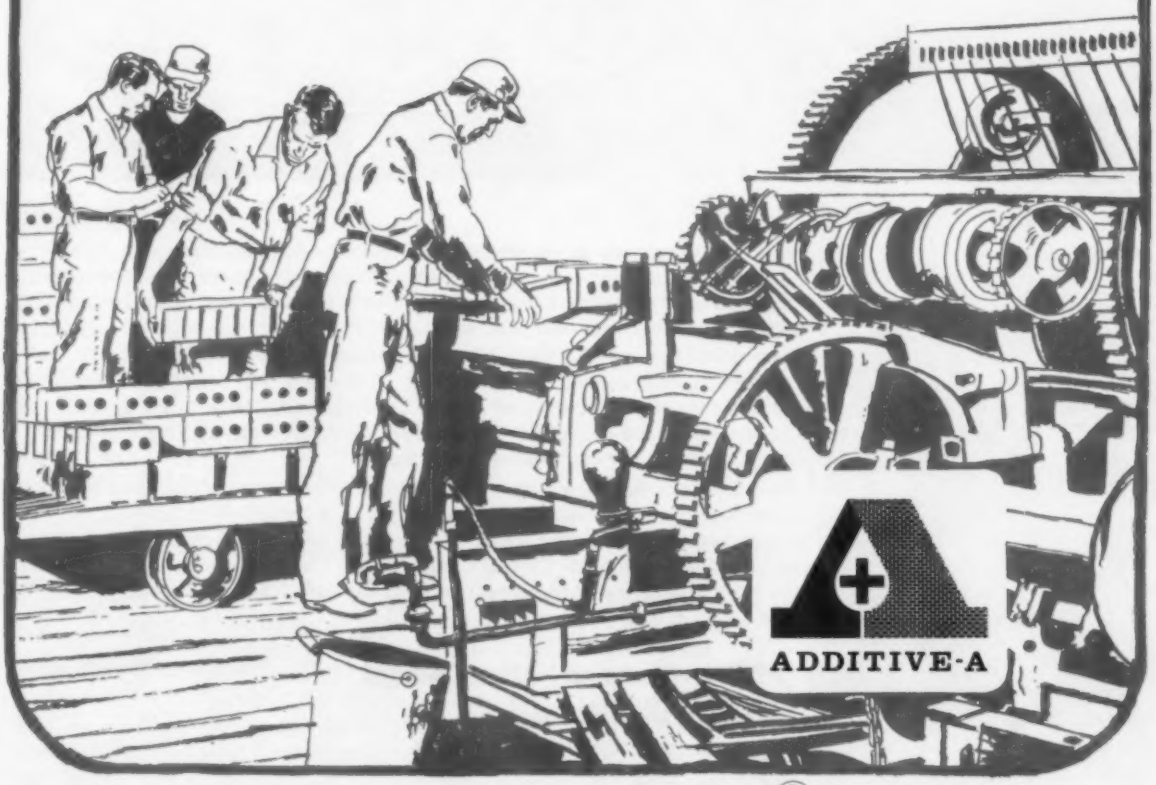
R. G. VARNER STEEL PRODUCTS, INC. • P. O. BOX 781 • PINE BLUFF, ARKANSAS

Circle Service No. 28

KANSAS BRICKMAKER IMPROVES QUALITY —CREDITS ADDITIVE-A®!

HOISINGTON, KANSAS — Mr. Ray Smith, president, Kansas Brick & Tile Co., Inc., of Hoisington, says: "We were the first Kansas plant to adopt full use of Additive-A clay conditioner. It permits us to give builders and home owners a better quality brick. Moreover, our dryer loss has greatly decreased, our power requirements for extruding have lowered, the green brick has taken on greater strength, the finished product is free of hair cracks and is better in every way. All this, thanks to Additive-A!"

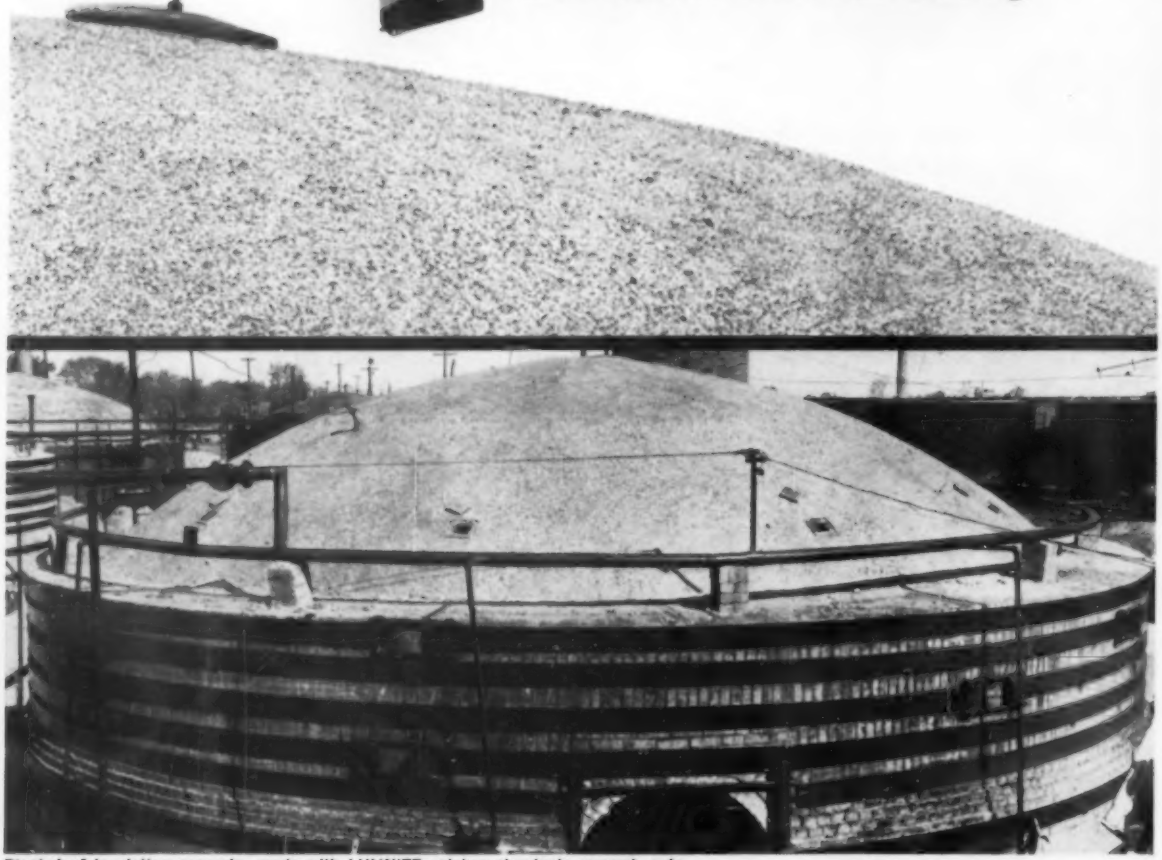
For descriptive folder on Additive-A, write to: Chemical Products, Kimberly-Clark Corporation, Neenah, Wisconsin.



Kimberly-Clark Corporation Contributing Associate S C P I

Circle Service No. 29

Refractory insulating concrete increases kiln efficiency



Blanket of insulating concrete, made with LUMNITE calcium-aluminate cement, cuts heat loss and improves efficiency of periodic kiln at Mason City (Iowa) Brick & Tile Co.

Field reports continue to confirm the substantial savings realized when periodic kiln crowns are topped with refractory insulating concrete made with LUMNITE calcium-aluminate cement. Fuel costs are greatly reduced, burns are more uniform, and ware in bottom courses is burned harder.

Placement of crown insulation is an easy operation: Neat grout of LUMNITE cement and water washed over kiln crown . . . 1 to 4 mix of LUMNITE and Vermiculite (by volume) placed 2" thick over crown . . . several firings later, 1 to 2 grout of LUMNITE and sand applied over crown insulation to provide seal coat for maximum durability and weather protection.

Many brick plants keep a supply of LUMNITE or their choice of castables ready for immediate use. Castables are convenient packaged mixtures of LUMNITE and aggregates selected for specific temperature and insulation needs . . . just add water and mix on the job. Castables are made by manufacturers of refractories. For more information, write Universal Atlas Cement, 100 Park Avenue, New York 17, N. Y.

L-204

"USS," "Atlas" and "Lumnite" are registered trademarks

Universal Atlas Cement
Division of
United States Steel

Offices: Albany · Birmingham · Boston · Chicago · Dayton · Kansas City · Milwaukee · Minneapolis · New York · Philadelphia · Pittsburgh · St. Louis · Waco

Circle Service No. 30

Materials and Equipment in the *NEWS*

Conveyor Buckets

Sand, clay and shale or any other granular material you handle in your elevator cannot build up in the bottom of the M-T-Matic Bucket. The secret is in the separately mounted stripper-plate, which replaces the back of the conventional 1-piece bucket. M-T-Matics are quickly and easily installed on any belt elevator. They are available in all standard sizes—can be ordered with or without protective lip. *Pekay Machine & Engineering Co.*

Circle Service No. 69

Vibrating Screens

Rapid particle acceleration and close screen contact, essential to efficient screening are produced by this high impact, completely balanced machine of unusual simplicity and versatility. This unit has high capacity built into it as one of its outstanding features. All operating parts are mounted for easy access for servicing and inspection. The range of screens available for this unit are from ½" to 325 mesh. The noise level of this unit has been reduced considerably. *Derrick Manufacturing Co.*

Circle Service No. 70

New Pulsating Burner

A new type of pulsating burner has been put to valuable service in the final stages of several brick making plants. The burners use either gas or oil as fuel and are employed as auxiliary heat sources for the brick drying process. The clean flame of these burners is considered the major importance in using these burners for brick drying. *E. W. Bliss Co.*

Circle Service No. 71

Truckster

A new model of the Cushman 780 Truckster that is equipped with a Percival dump hopper for light hauling application has been announced by this firm. This unit has an 11 cu ft dump hopper that will carry an 800-lb payload. The Truckster is designed for economical operation, delivering 50 miles per gallon. The unit also

features easy maneuverability for use in crowded or confined areas. It has hydraulic brakes on all three wheels and an independently operated parking brake. The Percival dump hopper for this unit is constructed from 12-ga cold rolled steel and is welded water tight. The hopper has a release catch and empties by gravity. *Cushman Motors.*

Circle Service No. 72

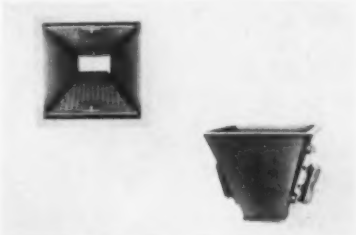
Industrial Tire

An armor-plated pneumatic industrial tire that is invulnerable to practically all puncturing objects encountered in scrap yards and on debris-littered construction sites has been introduced. Called the "Steel Protected Industrial Pneumatic," the tire has two plies of steel cables imbedded in the rubber beneath the tread. The tire, made with an all-purpose tread, is being produced in sizes to fit all popular materials handling equipment. *B. F. Goodrich Co.*

Circle Service No. 73

New Bridge Breaker

This firm has announced an improved Bridge Breaker which has been designed to move hard to handle materials which have a tendency to bridge, cake and otherwise obstruct continuous flow through supply bins. The Bridge Breaker-Series BB employs rapidly vibrating, expanded metal screens mounted inside the bins parallel to the walls. The

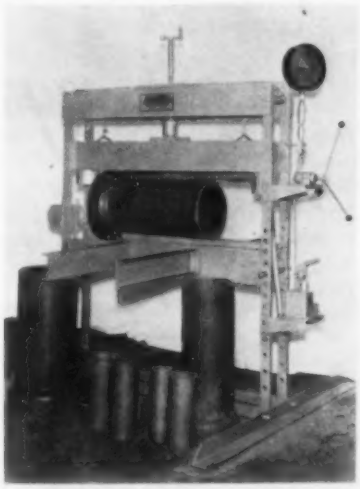


screen sections are adaptable to either flat or conical surfaces and are specifically designed for individual applications. Optional stainless steel construction is offered for special applications. *Thayer Scale Corp.*

Circle Service No. 74

Testing Machine

A 14,000 pound capacity precision tile testing machine has been announced recently. Designated as the Model PT-14, it is designed specifically for testing clay and concrete drain and sewer tile up to 24 inches, I.D. in lengths up to 48 inches. The



pressure gage is of precision design with a dial 8 inches in diameter

(continued from page 33)

calibrated 0 to 14,000 lbs. with 50 lb. increments. Said to be the first machine of its kind ever offered, Model PT-14 is available for prompt shipment. *Forney's, Inc.*

Circle Service No. 75

Loss-of-Weight Feeder

New duplex loss-of-weight feeder systems for solids or slurrys feature continuous feeding of two separate ingredients to a mixer. The system is completely explosion-proof, and is

remotely operated from a control console. A unique cross-over systems of control to accomplish transfer from one scale to another with minimal error is another feature of this feeder. *Dynametrics Corp.*

Circle Service No. 76

Mortar Penetrometer

A new cement and concrete laboratory instrument for measuring the rate of hardening of mortars sieved from concrete mixtures has been announced by this firm. Called the Mortar Penetrometer, the instrument operates by means of penetration needles to determine the rate of hardening. Six penetration needles ranging in end area from 1 to 1/40 sq. inches are supplied with the device. The set complies with ASTM specification D-403.

The device may be used to determine the effects of variables such as temperature, cement, mix design, additions and admixtures upon the hardening characteristics of concrete. *Soiltest, Inc.*

Circle Service No. 77

Forty-ton Press

New in a line of mechanical briquetting presses by this firm is this crank toggle press with 2⅜ inches depth of fill. This press is built for dry-pressing ceramic materials, powdered metal, carbon and any other powdered material which can be formed by pressing. A 3-speed gear transmission provides speeds of from 10 to 19 strokes per minute. Ample tool space is provided making this machine ideal for multiple cavity tooling. *Haller, Inc.*

Circle Service No. 78

Kiln Car Kit

A new kiln car kit has been designed to be used exclusively by the brick and clay industry. The kit consists of a customized front hitch designed to push or pull a kiln car; a special 1-inch handle for easier maneuvering; a governor to maintain a constant speed when moving the kiln car, and a special rear stand to rest the tractor on when necessary. *Graveley Tractors.*

Circle Service No. 79

Earth Boring Machine

The hydraulic-powered "Apache" announced by this firm is designed specifically for high-speed, production-type earth boring. The "Apache" accommodates reaming and belling tools to 60" diameter and drives 4-½" diameter augers to 75'. Respon-

sive, full-hydraulic feed, tilt and angle controls reduce operator fatigue. Optional equipment includes pole setter and winch, turntable and wiggletail. *Mobile Drilling, Inc.*

Circle Service No. 80

New Literature

Safety Kit—A plant safety kit aimed at making materials handling operations safer and more efficient in production, storage and shipping areas, by reminding workers of correct operating procedures related to the use of fork lift trucks, is again being released by the Towmotor Corp. *Towmotor Corp.*

Circle Service No. 81

V-Belts and Hose—A comprehensive catalog covering its line of industrial V-belts, including Cog-Belt and Poly-V and fractional horsepower types, as well as sheaves and industrial hose, has been issued. The 52-page catalog lists the complete product line with data on sizes, dimensions and prices. *Dayton Industrial Products Co.*

Circle Service No. 82

Truck Costs—A new 12-page brochure, "Industrial Truck Cost Calculator", makes it possible to estimate, in a matter of minutes, the costs incurred by industrial trucks. This is the first time that nomographs or alignment charts have been available to show costs of depreciation, operation, and maintenance accurately for both gasoline-powered and battery-powered trucks. *Lead Industries Assn.*

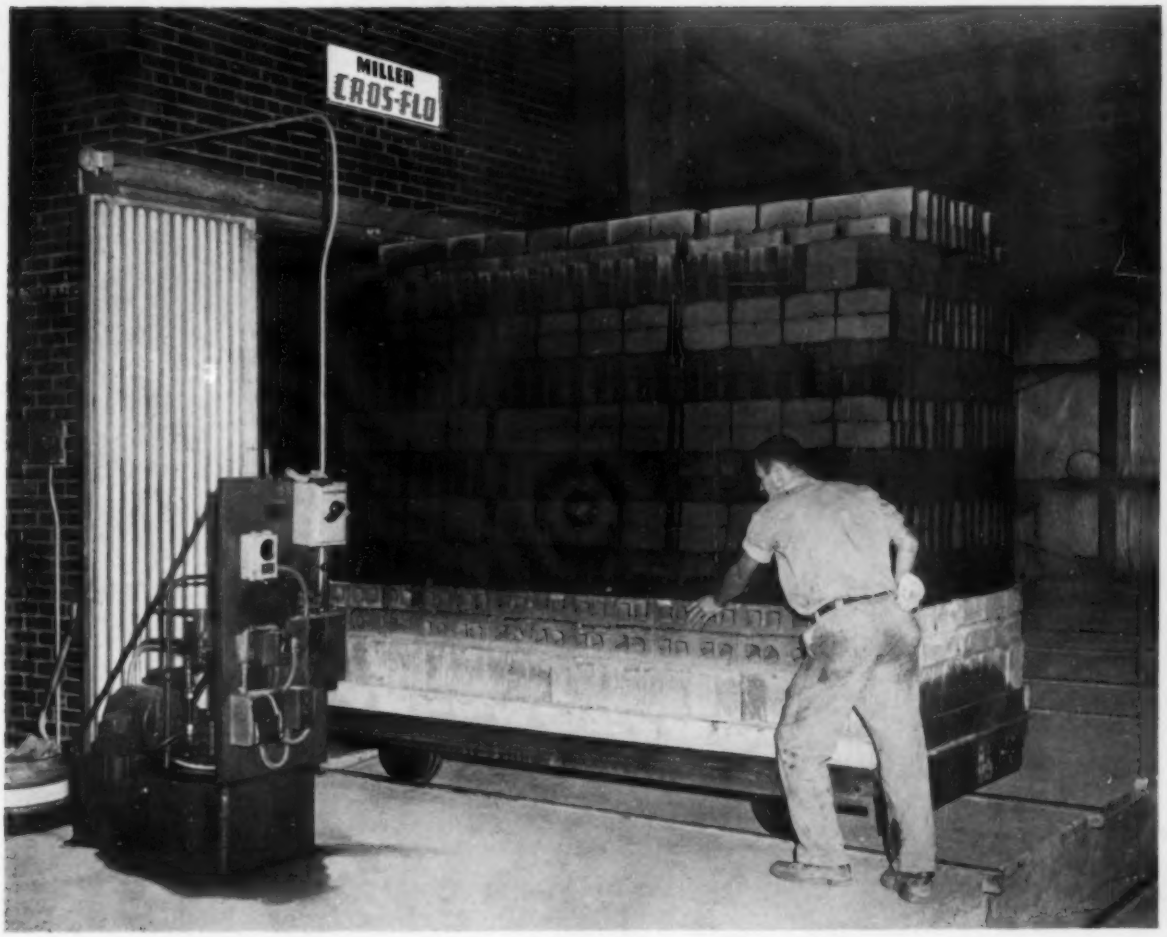
Circle Service No. 83

Crushing—This 40-page book has been prepared to provide a better understanding of the entire subject of mechanical size reduction. The various reduction methods—impact, attrition, shear and pressure—are described and discussed as are the many kinds of crushing equipment. The book is amply illustrated with diagrams and charts for easy understanding. *Pennsylvania Crusher Division.*

Circle Service No. 84

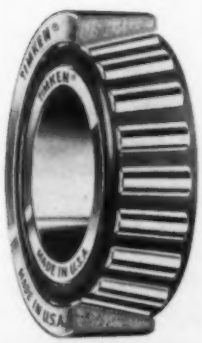
Steel Strapping—"Better Ways To Package, Unitize and Ship", a pocket-size, 40-page booklet, is being offered by the Signode Steel Strapping Co. The newly-revised booklet is the 20th edition of this basic reference guide to Signode strapping methods and tools. A new list of twelve strapping pointers is included to guide shippers to superior results at less cost. *Signode Steel Strapping Co.*

Circle Service No. 85



no heave-ho . . .

With Miller Built Kiln & Transfer Cars



Miller builds kiln cars to your specifications, and they build them to last. Whatever your kiln or transfer car needs . . . regardless of who built your tunnel kiln or dryer . . . Miller builds cars to meet your needs. And, with Timken Tapered Roller Bearings, you get years of smooth, anti-friction performance. Have Miller engineers analyze your car needs . . . complete information and prices submitted without obligation.

MILLER CARS WITH TIMKEN TAPERED ROLLER BEARINGS PROVIDE:

- Easy maneuvering
- Trouble-free service
- Smooth, continuous operation
- Anti-friction performance

LOOK TO MILLER FOR THE FINEST

- Cros-Flo Tunnel Kilns
- Hydraulic Equipment
- Plant Design
- Hammermill Crushers
- Calcining Furnaces
- Engineering Service

Miller Equipment Company

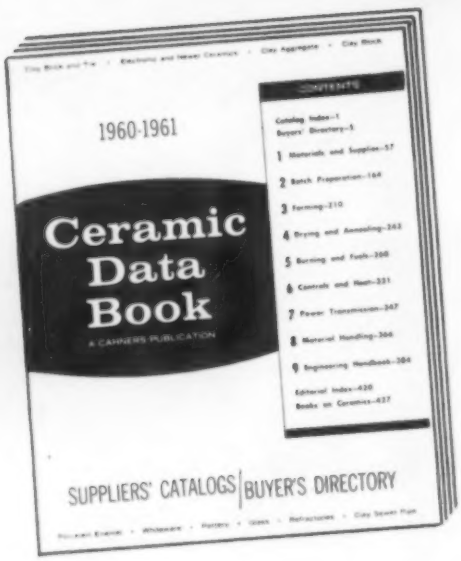
P. O. Box 1566 • Phone ME 3-3541 • Salisbury, N. C.

Pacific Agent:
WALTER C. STOLL & SONS
5028 Alhambra Avenue
Los Angeles 32, California

Circle Service No. 31

HOT OFF THE PRESS! . . .
THE NEW 1960-1961

Ceramic Data Book



Completely Revised

For the first time, the 1960-'61 CERAMIC DATA BOOK groups all advertisers' catalog pages and editorial-technical material on the same basic subjects into 9 distinct sections—materials and supplies; batch and batch preparation; forming; drying and annealing; burning, smelting, melting and fuels; control instruments and heat data; power transmission, including fans, blowers, compressors, and pumps; material handling, packaging and shipping; engineering handbook. You'll want a copy for every department in your plant.

Be sure to thumb through your copy immediately—to acquaint yourself with the new products and items—for future reference—it's important to your building and production planning.

Copies Available Now—$3.50 each; $7.00 foreign

A CAHNERS PUBLICATION

Ceramic Data Book

5 South Wabash Avenue Chicago 3, Illinois

PACKAGES BRICK DOUBLE QUICK!

Acme Idea Man Charles Apfelstadt (right) views Idea No. S3-69 at Owensboro Brick & Tile Company, Owensboro, Kentucky.

Here is your newest development for faster, more efficient brick packaging —the field proven Link-Belt/Acme Steel brick packaging system that can package as many as 120,000 bricks per 8 hour day, with a 7 man crew.

The speed and efficiency of this system enables this producer to *double* kiln output when required. And it packages in the usual multiple 100 brick pack or whatever quantity meets your exact needs.

Investigate the finest volume brick packaging method available today. We've prepared a colorful film of this entire operation for group showing. For arrangements, write us on your letterhead.

ACME STEEL

IDEA LEADER IN

STRAPPING

Circle Service No. 32

ACME STEEL COMPANY
Acme Steel Products Division
Dept. BCS-120
135th St. & Perry Ave.
Chicago 27, Ill.

Send me Idea No. S3-69 and examples of how major brick producers use Acme Steel Strapping.

*Name*_____

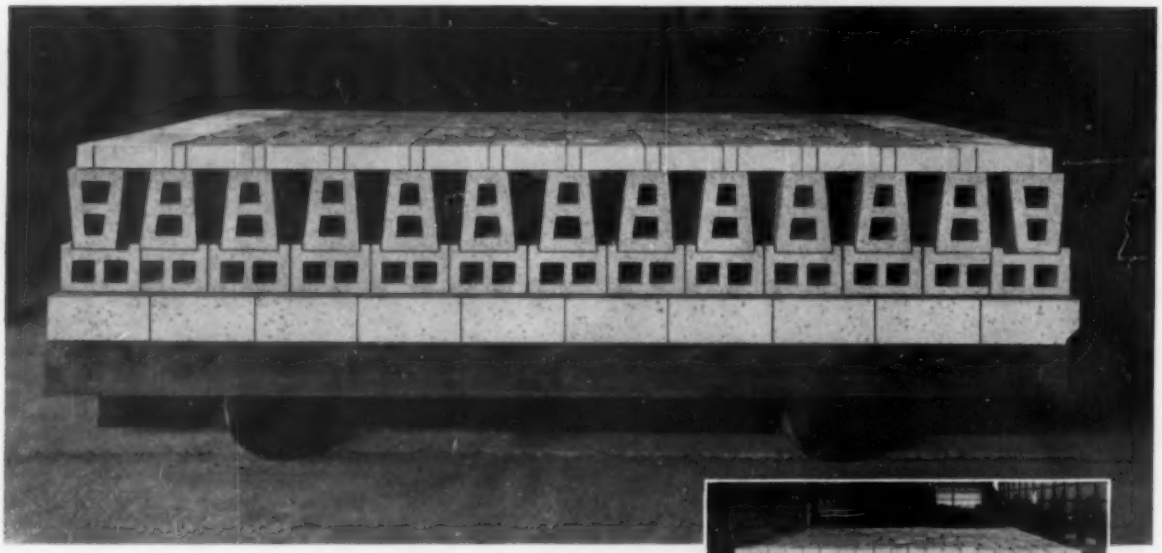
*Title*_____

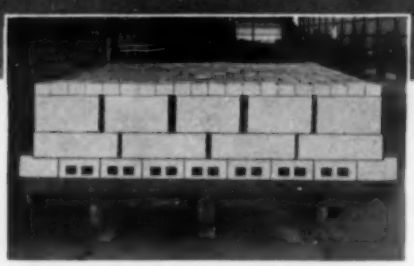
*Firm*_____

*Address*_____

*City*_____ *Zone*____ *State*_____

New Under-Fire Car Top Arrangement by PACO





...using an exclusive "A" Girder and Open Channel Block design!

Look at these outstanding PACO advantages! The "A" girder shape provides *greater stability* and offers less resistance to flame and gases. Their relatively thin wall (1⅜" max.) and open cores allow the products of combustion to freely pass through, around and between each girder and on to the entire deck surface for even distribution throughout the setting. The "bottling up" of heat in any one area is virtually eliminated. Cooling is also more uniform.

Only PACO Car Tops are made from the mineral pyrophyllite. They are stronger and highly resistant to thermal shock and hot load deformation. In addition to the under fire arrangement shown above, PACO Car Tops are made in a wide variety of shapes and sizes. Phone or write for complete information today. *You may be able to reduce your car top replacement costs by as much as 50%!*

NORTH STATE PYROPHYLLITE COMPANY, INC.

PHONE CYpress 9-1441 GREENSBORO, NORTH CAROLINA

OTHER PACO PRODUCTS INCLUDE: • Plastic Furnace Linings • High Temp. Cement • Fire Brick • Retort Cement • Blow Off Tile • Side Car Brick • Ladle Mix • Rear Arch Tile • Plastic Cupola Linings • Cupola Blocks

specifications

BOTTOM COURSE—PACO bottom block; side, corner and end blocks with center fill of castable refractory.

CENTER AND GIRDER COURSE—PACO channel block, designed to fit PACO "A" girder block.

TOP DECK—PACO 9" floor brick with two end courses of "A" girders, turned upside-down. The two end courses of floor brick are in a 10⅝" length to make car dimensions come out exactly right.

Open area in the deck is approx. 20%. Other PACO floor brick is available to give an open area of 30% or 40% for use with hollow ware and various other shapes requiring the larger open areas.

"A" girder block is available in heights of 7½", 9" and 11".

Circle Service No. 33

THE resources and facilities of Orefraction Minerals Inc. have been acquired by Metal & Thermit Corporation. As a result, the most complete service available on zircon is now offered by M&T.

The combined operation gives M&T sources of high quality zircon in both the United States and Australia for the production of granular, dry-milled and wet-milled zirconium silicates.

This expansion in zircon and the recent construction of a ceramic research center are part of a continuing M&T program to provide dependable supplies of high-performance material to the ceramic industry.

M&T Chemicals

The M&T line of **ZIRCONS** now includes:

GRANULAR
- Granular Zircon

DRY MILLED
- Milled Zircon — 140 mesh
- Milled Zircon — 200 mesh
- Milled Zircon — 325 mesh
- Milled Zircon — 400 mesh
- Milled Zircon — 600 mesh

WET MILLED
- MILLTROX® (Refractories grade)
- ULTROX® "Standard" Opacifier
- ULTROX® 500W Opacifier
- ULTROX® 1000W Opacifier

*Trade Mark

METAL & THERMIT Corporation,
Rahway, N.J.

In Canada: M&T Products of Canada Ltd., Rexdale, Ont.

Circle Service No. 34

Besser's interest in

YOUR SUCCESS

doesn't end with the sale!

Besser provides all these EXTRA SERVICES to save you time and money . . . help make your blockmaking operations easier and more profitable

Around-the-Clock Service

Besser maintains a staff of expert field service engineers operating on a 24-hours-a-day basis from 20 conveniently located district offices. These men are not salesmen "doubling in brass," but highly trained engineers. They check your Besser equipment frequently, to keep it in tip-top operating condition. A network of strategically located Besser warehouses assures fast deliveries of genuine BESCO parts.

Plant Layout Service

Provides authoritative block plant-engineering counsel on a no-charge basis. You benefit by the latest thinking on placing machines, men, and materials for the most efficient work-flow, greatest daily output, production economies.

Besser School for Blockmakers

Eleven-day technical sessions for ALL block plant owners, managers, superintendents, foremen, and maintenance men. We also conduct special management seminars covering such subjects as cost savings, statement analysis profit planning, and others.

Besser Technical Center

Conducts laboratory investigations of problems concerning processing, mixing, mold vibration, and end-product performance. Offers field and laboratory consultation on the selection, grading, proportioning, and mixing of aggregates. Conducts curing checks and routine testing. Nominal charge includes services of personnel, materials, and use of latest equipment.

Cooperative Advertising

Besser offers a comprehensive program of both no-cost and below-cost brochures, technical bulletins, calendars, post cards, ad mats, and other promotional aids imprinted with your name and address. Free block-plant brochure layout service available.

Service to Architects

Specialized planning for architects, builders, and other factors instrumental in getting more concrete block used in today's industrial, commercial, and residential construction. This service supplements the Besser Company's program of national advertising promoting concrete block and appearing in the professional magazines read by your architect and builder customers.

YOU CAN BANK ON BESSER for the best in blockmaking, handling—and servicing

BESSER *Company*

Dept. 139, Alpena, Michigan, U.S.A.

First in Concrete Block Machines

AO-329

Lightweight Clay Block Now?

The article on lightweight clay block in the October issue of BRICK & CLAY RECORD has drawn considerable comment. Manufacturers as well as suppliers wrote in and called in for further information.

The questions ranged over the whole production system. Some wanted to know more about aggregate availability and the type that should be used. Others questioned about the machines to be used in forming. Then there were questions on pricing. The suppliers of raw materials and equipment wondered about the applications of their products to the block or if some equipment they already marketed could be adapted.

We did our best to answer the questions and we hope that more and better answers will be developed at the next lightweight clay block meeting.

However, out of all this, we have come up with questions of our own.

Why, for instance, can't this idea get off of dead center when there is such great interest in it? Everyone admitted extreme interest but commented that he's just waiting a bit to see what the other manufacturers will do.

We can hardly blame management for taking it slower because a large investment is in prospect with the launching of the manufacture of the block.

Then again we ask, "What are the ceramic engineers and creative plant operators doing about it?" Even though management isn't prodding them to go forward, we believe that each one should do some experimenting on his own to get an idea of what it's all about and keep abreast of industry thinking.

As was suggested some time ago, there is nothing mysterious or difficult in getting acquainted with the process. Aggregate is available everywhere. Test pieces can be made in any shape and by several processes. By a few crude trials, a world of knowledge can be gained. As my own boss used to say, "You never get any grease on you unless you monkey around a grease barrel."

With building having a doubtful start early next year, this may be the right time to get greasy! There is no doubt that the block is a comer and that the interest is there.

J. J. Shea

Executive Editor

high temperature air jobs

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Throughout the ceramic field, you'll find Buffalo Fans doing the **punishing** jobs where temperatures, pressures and air moving loads are high! That's because we **engineer** each fan to the job.

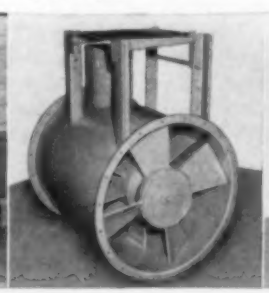
This may require wheels and blades of special material — extended shafts for operation through a kiln wall — shaft heat "slingers" — or in extreme temperatures, rugged Buffalo water-cooled bearings. We're equipped to design such special features into the complete line of Buffalo centrifugal, axial flow and propeller fans to meet almost any requirements you may have. In addition to the special fans shown here, Buffalo Industrial Exhausters, "E" Blowers, Pressure Blowers and Volume Fans are performing to complete satisfaction on all types of ceramic applications.

Your nearby Buffalo Engineering Representative will give you complete details and recommendations on your particular air handling problem or write direct.

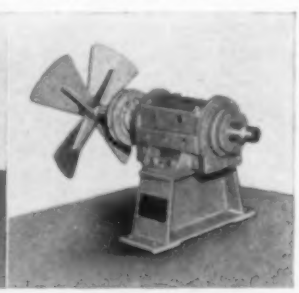
Handling 700° F. air at large refractories plant — Buffalo Type BL Fans.

Dryer recirculation on tunnel car kiln. Type NV with extended shaft.

15,000 CFM at 360° F.—Tube Propeller between kiln walls at brick plant.



Up to 1600° F. air—Type NV stainless steel fan with water cooled bearings and shaft heat slinger.



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Circle Service No. 37 ⟶

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GLAZE STAINS: Complete line—strong yellows, clean pinks, stable blue-green and grays. Laboratory controlled for top workability and uniformity.

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PREPARED GLAZES: For producing glazed brick in limited volume without a big outlay for glaze preparation equipment. Wide range of brick and pastel colors; all come ready to mix with water.

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SCPI

Pipe Plant Combines Flexibility, High Output

Robinson Completes 465-Foot Tunnel Kiln in Annex to No. 10 Plant in Mogadore, Ohio

4-foot long pipe are set three tiers high in the dryers.

The latest phase in Robinson Clay Product Company's improvement and modernization program is the completion of the 465-foot tunnel kiln in a 2½ acre "annex" to its No. 10 plant in Mogadore, Ohio, on the outskirts of Akron.

A new highly automatic production annex has been added to the present multi-story plant at this location. The old plant has been modified and modernized to efficiently produce large sizes of pipe. The two integrated facilities will produce a complete line of vitrified products, comprising four through thirty-six inch pipe, both standard and extra strength; wall coping; flue lining, etc. The tunnel kiln produces most of the 4" through 12" pipe and the periodic kilns fire the remainder. The products in the new plant are horizontally extruded; in the old plant; vertically extruded.

The annex is located directly adjacent to the periodic kiln plant so the existing crushing and grinding equipment can also be utilized for the new operation.

Two new horizontal extrusion lines have been installed in the new operation. An unusual feature of the new machine room is that the pipe is trimmed, corrugated and delivered to drying cradles or pallets on either side of the extrusion line after it has been formed. There are two different types of dryers in operation at the Mogadore plant, horizontal and vertical. On one auger press, pipe in sizes of 4", 6" and 8" in 3 to 5-foot lengths are automatically finished and stacked in cradles and sent to the horizontal dryers. On the second press, pipe in the 8", 10" 12" sizes are finished on one side of the machine and sent to the dryers in a vertical position. This same machine also makes and places 8" pipe horizontally in cradles. Each of the two vertical dryers (60' x 63') holds 99 pallets of green ware. Eight-inch to twelve-inch pipe are placed on a pallet. The pipe are set on end so that the air flow in the dryer, which is from the floor to the roof, passes through the pipe insuring uniform drying rates.

In the horizontal dryer, the air movement is from side to side so that the air also blows through the 4" through 8" ware. The floor of the horizontal dryer is heated by combustion products from the tunnel kiln.

The sewer pipe are fired in a Swindell Dressler 465-foot long gas fired salt glazing tunnel kiln.

Vertical Dryers Also Unusual

The vertical dryers are also rather unusual in that pallets of pipe can be stacked one on another. When four-foot lengths of pipe are being dried vertically, three tiers of pallets can be set one on another. Two tiers of cradles, each 12' high, are nested together in the horizontal dryer. The smaller pipe can be dried in the horizontal dryer in approximately sixteen hours while the larger sizes, including 10" and 12" pipe, in the vertical dryers can be dried in less than forty hours.

All of the dryers were designed by Robinson engineers using principles based on their experience in the clay

A setting bridge with air compressor and hydraulic pump straddles tunnel kiln cars.

industry. Lanly equipment has been installed in the dryers to provide absolute control over temperature and humidity conditions at all times.

After the drying cycle has been completed, the pipe are removed from the dryers by fork lift trucks to a mobile setting station or bridge which was also designed by Robinson engineers. The floor of the mobile setting platform is elevated so that the platform can be moved over the line of empty kiln cars without moving the cars themselves. A trolley supplies electrical power to the unit and the bridge carries its own air compressor and hydraulic pump unit. The larger size pipe are all handled with pneumatically operated lifts while the smaller pipe are handled manually. Small pipe is nested inside and around the larger pipe in the setting operation to create the maximum load on the kiln car.

Eliminate Use of Sand

One other feature of the setting operation is worth noting. The use of sand has been eliminated when placing the pipe on the rings. Paper rings have been substituted. The paper rings accomplish the same purpose as the sand in allowing uniform setting and, since the paper burns out in the firing process, there is no residue of sand to clean up every time a kiln car is emptied.

The tunnel kiln cars have a setting area of 10′ 6″ square. Each car holds from 4½ to 7 tons of ware. After the cars have been set, they are moved through a 55-foot preheater which is a double track unit; each track holding five cars. The preheater heats and dries setting rings and ware to a temperature of 360° before entry into the tunnel kiln.

The Dressler tunnel kiln, 465-feet 6-inches long and holding 43 cars, has been designed to produce 35,000 tons of ware annually. Each portion of the kiln has been designed to provide absolute control over the firing process. The cars first enter a 12′ 8″ vestibule equipped with double doors so that, when a car is charged into the vestibule, the drafts inside the kiln are not disturbed. The next section, approximately 25′ long, which the cars enter when they leave the vestibule, is the exhaust section of the kiln. At this point the products of combustion are exhausted from the kiln at the same time passing through the new hot pipe, further increasing the temperature of the ware in preparation for vitrification. The exhaust section is followed by the 117′ 6″ preheat portion of the kiln equipped with natural gas burners and high-temperature recirculating fans to provide uniform heating of the ware.

Under-Deck Firing

The kiln uses under-deck firing of the ware. In the 105′ firing zone, the pipe are subjected to the maturing temperature of 1,975° F and are salt-glazed. Immediately following the furnace section is a 31′ 1½″ rapid cooling section of the kiln. At this point, the ware is cooled rapidly to 1150°, or the temperature approaching the silica inversion temperature. This is accomplished by the use of high-temperature recirculating fans which circulate heat not utilized in the preheater. Cold air is bled into these fans to regulate the temperature of the air in this rapid cooling section. A problem was foreseen in this cooling zone, in that changing loads on the car would perhaps cause a differential cooling in these loads. To overcome this problem, radiation pyrometers, reading directly on the ware as it progresses through the

12-inch pipe are set over 6-inch pipe which are placed inside and between the larger size.

cooling zone, indicate the progressive cooling temperatures and proper adjustment can be made to insure proper cooling, regardless of the load on the kiln car.

Ware Is Cooled Slowly

After the rapid cooling zone, the ware is cooled slowly through the main cooling section, which is 134′ 4½″ long. Another high temperature recirculating fan which is regulated by a radiation pyrometer provides circulation in this section. Heat, in the form of a gas flame, is provided to this recirculating fan to again insure uniform and slow enough cooling. A 17′ 6″ cooling chamber, through which most of the cooling air is charged into the kiln, follows the cooling section. At the discharge end of the kiln is another 12′ vestibule, again equipped with doors at each end so as not to disturb drafts inside the kiln when a car is discharged.

In the salt glazing operation located at the discharge end of the furnace zone, the salt is injected into the kiln as a brine. In the "Brine-glaze" system, which has been patented by Swindell-Dressler, the salt brine is completely atomized before injection into the kiln. The atomized brine is mixed with the hot flame from the burner, which causes it to be ionized and evaporated instantaneously. The steam which is generated in this process is a big help in the glazing process in providing uniformity of the glaze. The system operates once every 15 minutes. The cycle is controlled according to a predetermined schedule. Not only is the amount and time interval of injection of the brine controlled, but the length of time the vapors are in the kiln is also automatically controlled. Pressure-controlled dampers coordinated with the brine-cycling mechanism close at the beginning of the salting operation and open upon the end of the salting period.

Fuel Consumption Raised

At the time that these pressure-controlled dampers are actuated, the fuel consumption in the salting portion of the kiln is automatically raised to compensate for the heat loss caused by the salt brine; compressed air is fed to the brine atomizer, the brine solution is then admitted to the kiln automatically. The salt vapors are exhausted through a separate exhaust system located at the entrance end of the furnace zone.

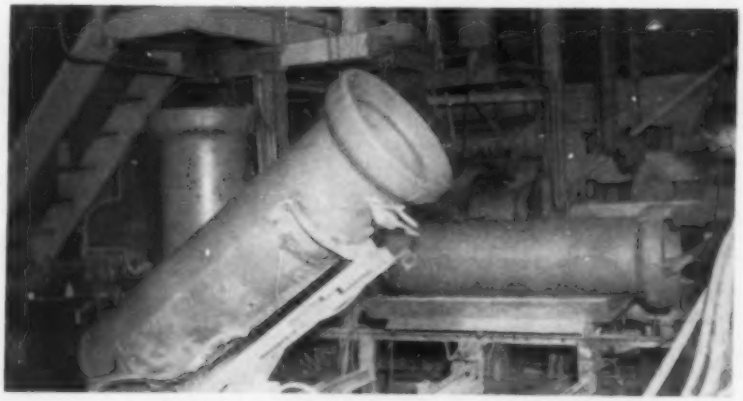
The entire firing operation is as automatic as modern times permit. There are ninety-six North American excess air gas burners on the kiln. The furnace section itself is divided into four control zones, and the cooling section into three zones. Each zone is automatically controlled on a predetermined schedule.

As the cars leave the kiln, they are transferred to a car-unloading area where the pipe is loaded either directly on trucks or are moved by special fork apparatus to the jointing building where the Robinson "Wedge Lock" and "Wedge Lock O" is installed. Robinson applies polyvinyl chloride, polyester and asphalt joints.

All the engineering for the new plant was performed by Robinson engineers with the exception of the tunnel kiln.

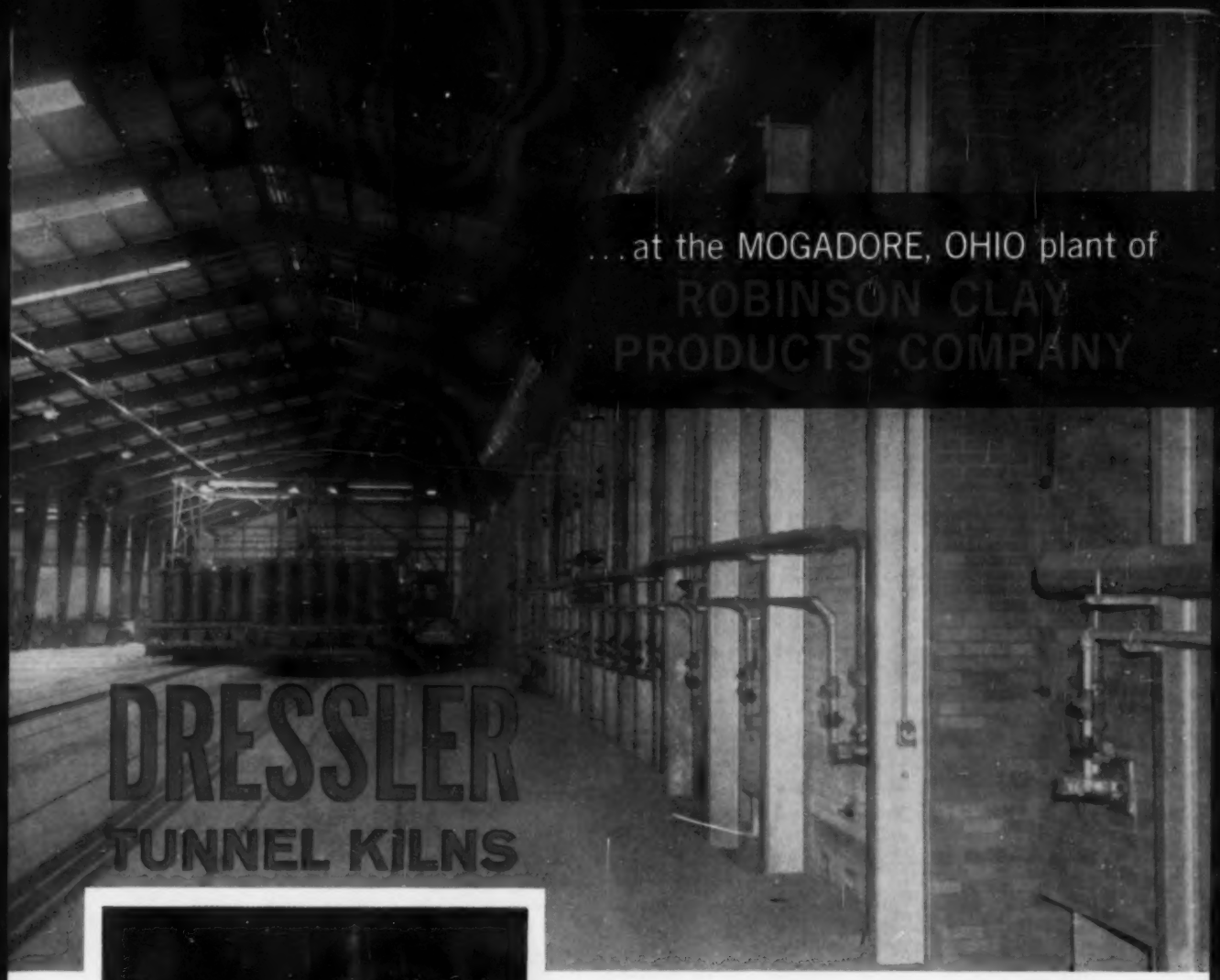
Laverne Diebel is the chief engineer of the company, Russell E. Arnold, the production superintendent. William J. Streb is plant superintendent of the Mogadore operation.

Fired ware being drawn from the kiln by a towing buggy.



12-inch pipe from auger press are set upright on drying pallets.

Superintendent Wm. J. Streb (left) and President W. E. Robinson review some production problems.



One of the Largest Pipe Kilns Ever Built

featuring the DRESSLER BRINEGLAZE Salt Glazing System

This 465 ft Dressler Tunnel Kiln, holding 43 cars with setting areas of 10 ft 6 in. square and firing pipe up to 12" diameter, has a capacity as high as 120 tons per day of 8 in. pipe in 5 ft lengths—one of the largest kilns ever constructed in the industry. With the patented Dressler BRINEGLAZE system, salt glazing is under completely automatic time-cycle control. A superior glaze results, at greatly reduced firing costs. The double-track preheater, shown at left, is 55 ft long. It dries the setting rings and preheats the ware to 360°F before entry to kiln.

• *May we discuss your projected production requirements?*

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Rocklite is made in rotary kilns and is unique because it is coated and well rounded.

Rocklite Products

First Producer to Make Rounded, Coated

Rocklite Products, Ventura, Calif., producers of lightweight expanded shale concrete aggregate, is celebrating its 20th anniversary. The company manufactured its first aggregate back in 1940 in a one rotary kiln operation. The company grew rapidly and as time went on added kilns and equipment and today, after 20 years, there are five rotary kilns.

Perhaps the most outstanding accomplishment of Rocklite is its unusual aggregate. Rocklite was the first producer to make a rounded, coated individual particle aggregate as opposed to the crushed angular type. Rocklite aggregate has unusually good properties and it is made by a slightly modified process. The individual aggregate units are formed to their correct size before firing, rather than being crushed to size after firing. By this process, each particle is rounded and coated. The Aggregate is strong and durable, chemically inert and low in absorption, the latter because of the coating.

Shale Adjacent to Plant

The shale from which Rocklite is made is located in a hill back of the plant. The entire hill is said to be composed of this blue, upper-strata, Pliocene shale.

A Caterpillar D-8 tractor is used to win the shale, which is being dug out of the hill. A self-propelled dragline scraper moves the material to the grizzly. This combination of winning equipment is capable of processing as much as 800 cubic yards of material daily.

The shale is delivered to the plant bunkers after having first passed through a Jeffrey crusher. This is a hammer mill type of crusher, which reduces the material to the desired size. Since the shale is medium soft, it is all prepared by this crusher and then passes over Symons screens, which sort out the raw material to various sizes. The larger sizes are scalped off in 9/16″ diameters and 5/16″ diameters. Eight mesh and finer particles are passed through.

Stored in Silos

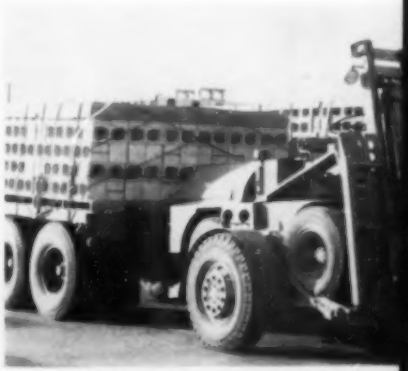
The sized particles are then stored in silos. There are four of these bunkers, one carrying raw material to produce 1″ top size finished product, another 9/16″, a third carries 5/16″ and the fourth Bunker has the fines, which pass through the final small screen.

The shale is deposited on a collector belt, which passes underneath the storage bins. This belt in turn delivers the material to conveyor belts that feed the rotary kilns. These rotary kilns are 8′ diameter and 125′ long.

The kilns are fired with natural gas at temperatures about 2,000° F Houck burners are used along with Barber-Colman automatic temperature controls.

After passing through the rotary kilns, the aggregate now is in its final form. There is no clinkering, or sticking of these particles, but each are separate individual units. The expanded calcined material passes from the rotary kilns into 6′ diameter coolers by 60′ long. The cooling is aided by natural draft through the cooler and water sprays.

The cooled aggregate is then fed



Right, delivery of Rocklite products is quick and arranged to suit the contractor. These lift trucks are hauled back of the delivery truck for fast unloading.

Celebrates 20th Anniversary

Individual Particle Aggregate

Five rotary kilns are operated. Four are constantly in work while one is in the repair stage.

to a rubber conveyor belt, which delivers it to a bucket elevator, which raises it to double deck Seco Screens for finished product screening.

The screens separate the 1″ x 9/16″ particles from 9/16″ x 5/16″ and 5/16″ x 8 mesh from the fines, which end up being 8 mesh x 0.

The storage bunkers then carry the finished aggregate. These bunkers are four compartment and each compartment can be opened to deliver a certain size aggregate.

The large majority of delivery is made in large bulk highway trucks, with rail used only to distant points. Delivery trucks are loaded directly from the bunkers, or from yard stock piles.

Aggregate delivered from the yard stock piles is loaded into trucks by a Scoopmobile, with a two yard bucket. The company also operates a unit crane with clam shell bucket for truck loading and stock piling purposes.

Dust Collection

This company has done a very effective job controlling dust by installing an individual Cyclone for each Kiln. The Cyclone in turn is backed up by a tubular Dustex system. The Cyclones gather coarser dust and the Dustex units capture the exceedingly fine dust.

The captured material is pneumatically sucked into a large bin by Vacu-lift.

Interesting to note is that the fines collected are subsequently reduced to a wet consistency by the use of water sprays, with the material passing through a horizontal screw.

From the end of the screw, the material is deposited into a dump truck and disposed of.

The company's laboratory technician, through periodic dust count testing maintains strict control to keep the count within specifications.

Adjacent to the lightweight aggregate plant, Rocklite operates a large concrete block manufacturing plant. This plant uses three Besser machines and produces 175 different sizes and shapes of block in two complete color lines. Miscellaneous items are made in a third color.

Rocklite also operates a one Besser machine plant at La Puente in Los Angeles County.

Operating personnel for Rocklite Products are E. F. Brovelli, president; J. R. Anderson, secretary-treasurer; D. O. McCall, vice-president and engineer; E. A. Peterson, vice-president and general manager; M. E. Fitzpatrick, sales manager; William Bogner, aggregate plant superintendent, and Luther Frame, block plant superintendent.

List of Suppliers

Caterpillar Tractor
D8 .....Caterpillar Tractor Co.
Crusher .....Jeffrey Mfg. Co.
Screen .....Symons Bros.
Screen .....Overstrom Mfg. Co.
Dust Collectors
.....Cyclone; Dustex; Vac-U-Lift
Controls ....Wheelco Div., Barber-Colman
Heat Belt .....American Rubber Co.
Crane .....Unit Crane Co.
Front End Loader .....Scoopmobile
Vibrators .....Syntron
Trucks .....Peterbilt
Lift trucks
..Clark; Hyster; Rinson; Allis-Chalmers
Trailers .....Pike; Utility
Block Machines .....Besser

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Mobile Kiln Cooling Fan

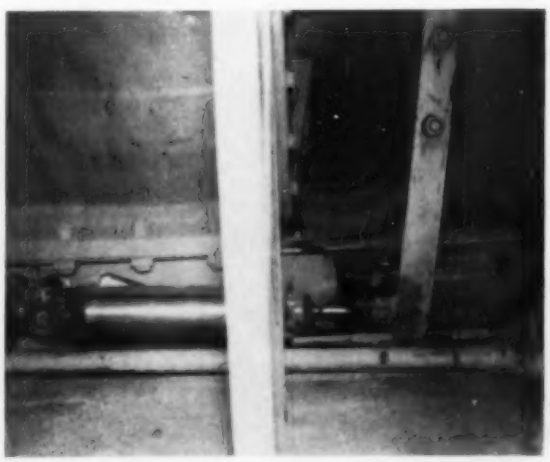
Are your dryers not getting enough heat because "cold kilns" are plugged into the waste heat system in order to keep the kilns cool enough to work in? Fans blowing directly on the men in the kiln cause many complaints besides being in the way. A mobile exhaust fan pulling air through the kiln will solve the problem. The fans are also helpful in getting rid of excess waste heat without slowing cooling schedules. Hot air up to 800°F can be pulled out of the kiln and blown straight up into the atmosphere. Higher temperatures may be handled with special alloy fans.

Increase Fork Truck Capacity

Here's a tip that fork lift truck manufacturers might not go along with—but eight years of plant experience have shown that it works okay. The capacity of your fork lift may be increased a few hundred pounds by casting a large block of scrap lead and bolting it to the back of the truck over the radiator housing. In one case, a plant had several trucks with a capacity of 4000 pounds, but two strapped cubes of brick weighed 4600 pounds. This overload caused the rear wheels to leave the ground. An 800-pound block of lead was cast and bolted to the back of the truck, making the truck completely stable. To help figure how large a block you need, lead weighs 710 lb./cu. ft.

Convert Manual Pug Mill Clutches To Push Button Operation

An air cylinder may be used to replace manual clutch operation on an extrusion machine. The cylinder is actuated by an electric solenoid. "Stop-Start" or panic "Stop" push buttons can be placed at any location at the brick machine, pug mill, cutter or along the hacking belt. The ability to save a few seconds in starting or stopping the machine will increase the production and reduce the amount of defective ware produced because of broken wires, etc. The quick stop is also a safety feature.



Architectural Breakthrough!

Permanent Color for Lightweight Block

Glaze Formulations for Clay-bonded Vermiculite Block

	Pink lb.	Blue lb.	Tan lb.	Red-Brown lb.
Frit A	0.40	0.40	0.40	1.00
Frit B	1.40	1.40	1.40	0.79
Frit C	0.70	0.53	0.35	——
Lundey	0.53	0.53	0.53	0.53
Whiting	0.17	0.17	0.17	0.17
Superpax	0.80	0.80	0.80	0.80
Flint	——	0.18	0.35	0.70
Stain	0.30	0.30	0.15	0.20
Water	908cc	908cc	908cc	800cc
CMC Low Vis.	5.5 g.	5.5 g.	5.5 g.	5.5 g.

Frit A		Frit B		Frit C	
K_2O	0.3%	PbO	61%	CaO	3.3%
Na_2O	8.5%	Al_2O_3	7%	MgO	16.1%
CaO	17.0%	SiO_2	32%	Al_2O_3	19.6%
Al_2O_3	5.0%			SiO_2	61.0%
B_2O_3	18.7%				
SiO_2	50.5%				

Lightweight structural blocks with permanent weatherproof color are now a reality and will soon be an important new product in the architect's bag of tricks. Developed by the Zonolite Company, blocks are made light by the inclusion of up to 12 per cent of expanded vermiculite in a clay matrix. The product is now in pilot plant production. Successful pilot production runs have been completed using concrete block machines and "soft mud" brick molding machines.

Offer Economies

Lightweight blocks will offer a number of economies which can materially reduce the cost of constructing a building.

Delivered costs of the blocks are anticipated to be competitive with concrete block because of significant savings in shipping and handling. The reduced dead weight means that structural supporting requirements, particularly for multistory buildings, would be considerably lower. Labor costs on site are also expected to be lower. An additional advantage is the extremely high insulating quality of these blocks—with a U-factor* of one half that of the dense blocks—which means lower heat losses from the building.

The architectural design potential of these blocks has been enormously increased by the development of colorful, permanent glazes. An exhaustive development program was carried out by Zonolite to find glaze formulations that would yield glazes with the desired textures and colors. Of all the compositions that were tested, only the lead glazes gave consistently good results.

The ability of lead to promote glaze-body reactions, coupled with a controllable viscosity and low surface tension made it possible to formulate glazes with varying textures—from a rough to a smooth, high gloss texture—despite the relatively rough texture of the fired block.

Glaze During Firing

Glazing can be accomplished during the firing of the block—called "single fire" glazing in the structural clay industry. Or, the fired blocks can be ground to precision dimensions—the block grinds easily—and "double fire" glazed at a lower temperature.

Three general grades of lightweight block can be produced—10-lb., 20-lb., and 30-lb.—depending on the percentage of vermiculite included in the mixture, Standard concrete blocks, on the other hand, with a nominal block size of 8 x 8 x 16 in. weigh about 40 to 45 lb. The 20 and 30-lb. block types have high strength and, in this regard, meet the A.S.T.M. specifications for class A concrete block (A.S.T.M. C90-52—1000 psi compression strength over gross area).

Where to Use 10-lb Block

The 10-lb. block is lower in strength and is not designed for structural applications. It will be ideal for unloaded interior walls, in hospitals, schools, industrial plants, etc., where its permanent ceramic color will provide an easily cleaned, colorful finished interior surface without the necessity of an additional finishing operation.

Vermiculite is a lightweight aggregate material weighing only 7-lb. per cu. ft. after being expanded. It is compatible with clay materials and can withstand firing temperatures up to 2100 deg. F. Above this temperature, the vermiculite begins to melt. The block manufacturer will be able to expand this material himself and the clay matrix can be any raw material that is suitable for structural clay products.

*U is the overall heat transfer coefficient (Btu/hr./sq. ft./°F)

Southern Brick's Grinding-Storage Unit Completes Modernization

All power controls for grinding room are centrally located near the feed point and provides easy view of all equipment.

A new grinding room and ground storage shed this past summer marks the completion of an extensive modernization program by Southern Brick Company of Ninety Six, North Carolina. Under the direction of Southern president Joe H. Patrick, a new machine room and the company's first tunnel kiln was begun four years ago. The second Harrop tunnel kiln and twin dryer, with another J. C. Steele forming line, were added in the summer of 1959. (See April 1958 Brick and Clay Record story). The presently reported addition completes their modernization plans and gives Southern one of the most modern and flexible plants in the South.

By George O. Harrell
North Carolina State College

Southern Brick Company's new 50 x 100 foot grinding room and 80 x 280 foot clay storage shed gives over 30 days supply for their tunnel kiln production of 144 M brick per day. Utilizing experience gained from an older similar installation, this progressive South Carolina firm coordinated mining, mixing, grinding, and storage to insure a uniform blend of clay and shale to the brick and tile machines.

Attention to Details

"Simplicity and careful attention to engineering details," according to Supt.-ceramic engineer C. A. "Bud" Perry, "is the reason we can grind over 100 Tons/Hr. with one hammermill." "And the only way we could do this properly was to start our planning in the clay and shale pits" reports Perry. Southern uses a mixture of one-third highly plastic alluvial-clay and two-thirds friable and variable pre-cambrian shale. The clay contains about 18% water content so the shale must be mined fairly dry to prevent sticking and clogging in the grinding circuit. Shortly after their first tunnel kiln was built, Southern began an extensive "landscaping" of their newly opened shale mine. A thin cut with a scraper pan over long sloped stretches assures a uniform mix of properly drained shale. If wet weather becomes severe, the top wet crust is discarded just as overburden would be. And Southern has found that constant attention to the mining has meant less trouble in the grinder and top quality production.

Each 14-yard dump truck brings the properly mixed shale and clay to the grinding room by stopping at the clay pit and shale mine on each trip. A 28-yard hopper, half-in, half-out of the grinding room, receives the shale-clay mix from the trucks. A unique rolling roof over the hopper protects the material from the weather.

Hydraulic System

Situated next to the dumping point is an electrically powered hydraulic system with fast-coupling hoses for operating the dump mechanism on the trucks. This has eliminated costly maintenance on power take-offs on the trucks.

Situated under the hopper is a large Syntron vibrating feeder which delivers a very accurate feed to a conveyor belt feeding the largest Miller double-rotor hammer mill. Addition of a second hopper and Syntron feeder adjacent to present one is planned for the near future when Southern opens a new clay mine. At that time, clay and shale will be hauled separately and proportioned with the two Syntron feeders onto the same belt feeding the Hammermill.

Success With Hammermill

Feed into the Miller Equipment double-rotor hammermill, equipped with 2-100 Hp motors, is an example of "detail" attention that paid-off. By carefully adjusting the feed and position of the hammermill, a uniform distribution across the whole face of hammers was obtained. This has resulted in high tonnage through the machine and a hammer life of between 250-300 hours. Ground material is conveyed to a short distribution belt feding three 5' x 8' Leahy heated vibrated screens. The short flat feeder belt with side discharge makes it easier for Southern to maintain a uniform distribution across the

three screens. This and the addition of 30 kva heat power on each screen, twice that normally encountered, assures high tonnage screening of the 8 mesh material even with bad moisture conditions. Tailings from the screen are chuted to the hammermill feed belt while the -8 mesh fines are conveyed to the new 80 x 280 foot ground storage shed.

Controls Centrally Located

All power controls for the grinding room are centrally located near the feed point and provides easy view of all equipment. One man runs the entire grinding operation while one man is used for clean-up there and in the storage shed.

Built by A. L. Jarrel and Sons, the storage shed has a shuttle conveyor for distributing the ground material throughout the 280 feet length. Material is reclaimed by two men using shovels to "cave-in" material onto a 3-foot wide conveyor belt located in an 8-foot tunnel under the material. Running the full length of the building, the conveyor feeds into a surge hopper located over a J. C. Steele even feeder at the end of the building. Operation of the belt feeding the surge bin is controlled by a rotating "load" switch mounted in the bin. Material from the Steele feeder is conveyed directly to the machine room and distributed to surge bins over each brick machine.

Cold Weather Means Extra Care for Your Equipment

Regardless of whether you plan to use it or put it in storage until next spring, your equipment needs special care during the winter months.

Cold weather conditions create additional service problems for almost all types of equipment and a sound winter protective maintenance program has to be well planned to allow for these problems.

There are five general areas that require extra special consideration for winter operations—lubrication, cooling system, starting system, fuel system and electrical system. These same areas must also be cared for if storage is planned.

Lubrication

As temperatures settle to the lower ranges, lighter weight oils must be used. At below freezing temperatures, the engine crankcases should be filled with SAE No. 10 crankcase oils. The lower viscosity oil perimts easier cranking of the engine and is fluid enough to freely circulate during the warm-up period.

During periods of extremely cold weather, or in climates of constantly very low temperatures, it may be necessary to dilute the oil with kerosene in order to provide sufficient viscosity. When temperatures rise somewhat, however, the diluted oil should be drained and the crankcase refilled with undiluted oil, since too-thin oil will not give proper lubrication in warmer weather.

Lubricant used for bearings must also be changed to a lighter grade for cold weather, with No. 1 or No. 0 normally the most successful.

A grade of at least No. 80 transmisison oil is recommended by Caterpillar when temperatures drop below freezing. As with the crankcase oils, it may be necessary to thin this oil with kerosene during extremely cold weather periods. Again, however, the oil should be changed when warmer temperatures return.

While of great importance during warm months, lubrication of the track and carrier rollers becomes even more important in cold weather operations. Except for the Lifetime Lubricated rollers, which require no field lubrication, it is generally necessary to switch to lighter grades of lubricants during sub-zero weather. In some instances it may be necessary to use oils in place of grease. The ability of the standard grease gun to handle the grease outdoors is a good general guide as to when it is time to change to lighter grades, or switch to a crankcase or transmission-type lube oil. Track-type tractors equipped with Lifetime Lubricated rollers or idlers, standard on most Cat-built crawlers, in good condition do not require refilling even in the coldest weather since they are filled with a low viscosity lubricant during factory assembly. They are refilled only at the time of rebuilding.

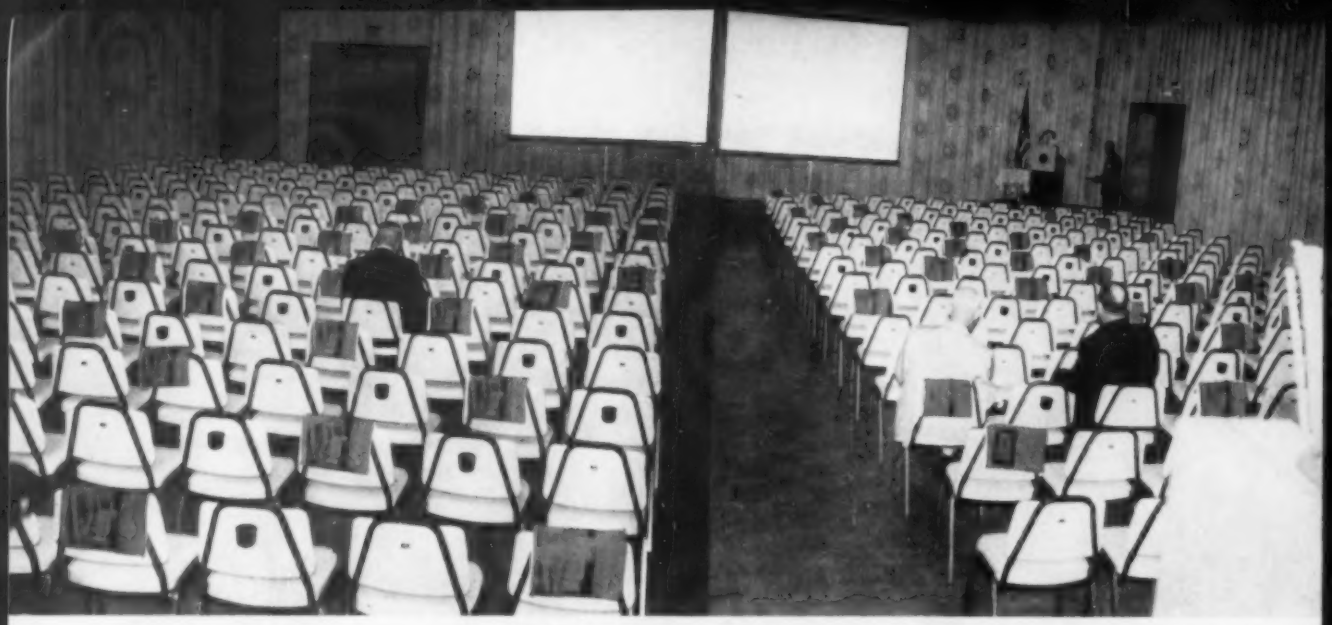
Starting

For machines equipped with gasoline starting engines, cold weather starting normally presents little difficulty, IF both the gasoline and diesel engine are in good shape and the necessary precautions regarding lubricants have been observed.

Diesel engines depending on either electric or air starting systems, however, are sometimes difficult to start without some additional help in temperatures generally below 50 degrees F. The solution in these instances generally is to use additional external heat, such as manifold air heater or ether starting aids. In extreme situations, such as Arctic conditions, it often becomes necessary to heat the crankcase with a torch or some other form of high heat.

The onset of cold weather makes

(continued on page 62)



Brick & Clay Record is very much in evidence in the meeting room prior to the opening session of the 1960 annual convention of the Structural Clay Products Institute at Hollywood, Fla., November 14-16

Clay Industry Optimistic for 1961

Many new plants are under construction or on the drawing boards. Advertising and promotion has been stepped up to meet competition. Education in clay products is emphasized at the college level.

The 1960 Annual Convention of the Structural Clay Products Institute was held at the Diplomat Hotel, Hollywood, Florida, Nov. 14-16. The general outlook of the meeting was optimistic with the industry looking forward to greater business activity in 1961. Plans for new plants, new kilns and the modernization of forming and preparation equipment were reported by many of the members attending the meeting.

Paul B. Belden, Jr., Belden Brick Co., Canton, O. and president of SCPI opened this 26th anniversary meeting. His opening remarks reminded the members that the industry is launching upon a new era with a new approach to sales and promotion. Competition is spending great sums of money on sales and promotion and these sums must be met by our industry. With good teamwork the clay products industry will be able to meet and surpass the competition.

H. B. Foster, general manager, Brick & Tile Service, Inc., Greensboro, N. C. discussed reinforced brick masonry as an engineering material. He stated that in his area, RBM helped open new markets, hold old markets and expanded regular products in the old markets. Considering masonry as an engineering material and not as a building material, RBM is a new approach to masonry construction. Properties which never before were taken into consideration are now being studied by the users. Successful applications of RBM have been made in retaining walls, hydraulics, swimming pools, motels, sludge tanks, filters, drainage canal linings, billboards, silos and fallout shelters.

Foster also pointed out that brick is the most non-engineered building material in the world today and he tried to interest engineers in using the properties of RBM. Codes disregard the engineering properties of clay products in many instances hampering the construction of brick units.

Foster's talk on RBM was supported by Robert W. Harrington, manager, Clay, Brick & Tile Ass'n., San Francisco, Calif. Harrington discussed the use of RBM and the use of the high-lift system which is so well accepted on the West Coast.

The high-lift system involves using brick as the form for the RBM and a grouted cavity in the wall. The brick walls are built as a special unit and the reinforcing rods are placed in the proper positions, both vertically and horizontally. The cavity is cleaned very thoroughly to insure good adhesion of the grout to the brick. A slush cement is then poured into the cavity at one-story intervals.

Brick Architectural Education

Prof. Raymond D. Caravaty Rennselaer Polytechnic Institute, discussed the role of SCPI in architectural education. With 44,000 available items for construction, competition is at an all time high. Only three hours of an architects study are spent on clay products, so it is up to the industry to provide schools with more information in the form of visual

Phil Dressler, Swindell-Dressler Corp., Pittsburgh, Pa., is shown enjoying fresh air during the SCPI convention.

Some of the N. C. delegation to the SCPI convention tried the Hollywood-Miami waters to see how fishing compared to that back home in the "brick capital". L to r: Stu Snider, Taylor Clay Products, Salisbury, N. C., hold the 4-ft sailfish he went out to get for his den; Bob Foster, Brick and Tile Service, Greensboro, N. C., hold his 47-lb Amberjack; Mrs. Snider helps Chuck Taylor, president, Taylor Clay Products, hold his 6½-ft sail; Mrs. Taylor is shown holding her dolphin which is dwarfed by her husband's sailfish. Grins on the faces of the skipper (background) and mate (kneeling) of the Lucky Strike prove it was better than an average haul.

aids, promotional literature and techniques of teaching brick masonry. This coordination of education between the clay products industry and schools is being accomplished by the engineering department of SCPI which has set up advisory committees of professors to establish proper curricula and teaching aids.

In his talk "Build Better-Manage Better-Sell Better", Mr. Edward C. Carr, president, R & B Construction Co., Springfield, Va. related how the SCR bricklaying system has aided him. He is now saving $100 per house using the system, and at the same time getting straighter walls and better joints. With his company building 151 houses per year, the savings involved at the above rate plus the better workmanship is considerable.

John J. Murphy, president of the Bricklayers, Masons and Plasterers' Union of America spoke on "Partners in the Masonry Industry". The use of equipment to aid the bricklayer was discussed to have brickwork more competative with other materials. The BMPU is constantly emphasizing apprenticeship so that good men can keep coming into the industry. This

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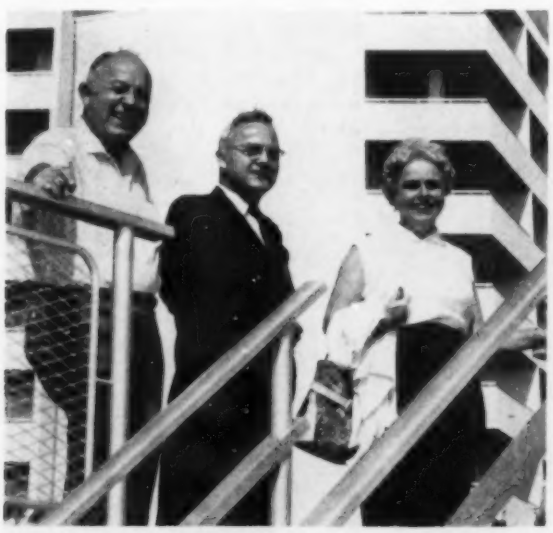


The Buehlers, of Fairfield Brick Co., Zoarville, Ohio, take a Florida stroll.

Mr. & Mrs. Dick Otterson, Evans Brick Co., Uhrichsville, O., enjoy the Florida weather.

More Than 100 at ACS Section Meeting

Highlight Automation at French Lick

Jim Wilcox, Alliance Clay Products Co., and C. H. McDonald, West Bros. Brick Co., listen while Henry Burns, Jr., Burns Brick Co., talks about clay block.

Asher Atkinson, Chambers Bros. Co., and John Brown, Marion Brick Co., listen while Jim Hedgepeth, vice president of Marion Brick Co., puts across a point.

OVER one hundred members of the American Ceramic Society, along with some of their wives, attended the Fall meeting of the Structural Clay Products Division at the Sheraton Hotel in French Lick, Ind., recently.

Featured at the meeting were plant trips to two prominent clay products plants in the Indiana-Kentucky area. A morning visit was made by chartered bus to the Cannelton (Ind.) Sewer Pipe Co. After lunch, the group toured the Murray Tile Co., Inc., Lewisport, Ky.

A variety of practical and semi-technical papers was presented.

Low cost methods of sanding brick were explained by H. W. Wilson of the Delaware (O.) Clay Co. Wilson pointed out that sands which pass through a No. 70 screen blend better with ceramic colors than do coarser sands. A typical composition for sanding would be one ounce of color for every pound of sand. Deeper or lighter colors can be obtained by varying the amount of the color, but for experimental purposes, the above composition is a good starting point. In the low cost sanding method explained by Wilson, a gravity-fed machine is used. The machine requires only one operator, who drys, screens and colors the sand at the same time while operating the machine. Approximately 95% of all the production at Delaware Clay Co. is colored and sanded brick, and it was found out that the approximate cost of sanding averaged about $2.00 per thousand.

Brick Deterioration

Robert H. Anwyl of Acme Brick Co., Clinton, Okla. discussed "Deterioration of Dried Clay Brick". At one time the company noticed an increase in their kiln and dryer losses and tied this loss directly with the increased precipitation during the time the losses were taking place. Since the brick were being air-dryed, it was decided that the loss was due to the amount of regain moisture picked up by the brick at the time.

R. L. Whitaker, Carolina Ceramics, Inc., Columbia, S. C. discussed "Some Phases of Kiln Firing". He mentioned that there were three phases in the manufacturing process to look for trouble in helping solve kiln firing problems. These phases are; 1) the raw mixture, 2) the preparation of the clay, and 3) the forming of the clay. He also mentioned that the drying itself could be divided into the three well-known stages of drying: 1) the removal of the shrinkage water, 2) the removal of the pore water, and 3) the removal of the chemically combined water.

Robert Hughes of the R. H. Hughes Co., Columbus, O., discussed "Automatic Program Firing of Periodic or Shuttle Kilns." Hughes brought out the fact that by auromatic program firing, no kiln fireman is necessary.

Mr. & Mrs. C. D. Isenhour, Isenhour Brick Co. and Mr. & Mrs. J. A. Gustin, Martinsville, Va. enjoying themselves at cocktail party.

Horizontal extrusion with some of Cannelton Sewer Pipe Co.'s newer, machines was also noted. Notice the automatic stocking device in the background.

He mentioned illustrations about several plants, operating from 17 to 26 periodic kilns using no labor for firing, ending up with an ultimate savings of 15.7% in fuel and labor.

He gave another illustration where one structural clay plant, burning their ware in rectangular down-draft kilns had a savings of 12.3% in fuel alone, and a corresponding increase of one percent in No. 1 brick, while at the same time eliminating six men.

Dudley P. Frame, Jr., Miller Equipment Co., Salisbury, N. C., discussed the vibrating hearth calcining furnace which the company recently built for pre-firing clay. Frame pointed out the advantages of prefiring the materials and gave the physical dimensions of the furnace. A large number of questions were raised from the floor on this subject, showing a lively interest, and Frame, along with C. H. McDonald, superintendent of West Bros. Brick Co., Washington, D. C., where the calcining furnace is located, answered all the questions.

The use of Additive A in the manufacture of brick and sewer pipe was discussed by Harold Emrich, Denver Brick & Pipe Co., Denver, Colo. Emrich brought out the most important benefits of using additive A or any other additive in that it served partially as a scum preventative. It also helped the drying properties and acted as a lubricant. By using Additive A, the company was able to reduce the moisture in the mix from 17.3% to 16.1%, and at the same time, reduce the power in the extrusion machine by 50 amps.

Discusses Nepheline Syenite

E. C. Lowe, Straitsville Brick Co., New Straitsville, O., discussed the use of nepheline syenite in structural clay products. The clay that is used in the production of large flue liners by the company contains enough free quartz to cause cracking of the ware on cooling. This theral cracking was partially overcome by slowing the cooling process. However, the kiln losses were still higher than desired. Additives were investigated on the basis of their effect on the clay mix, availability and cost. Nepheline syenite middlings were selected on the basis that an addition of middlings to a clay mix reduces the amount of free quartz because there is no free quartz in nepheline syenite, and also due to the solution by the nepheline syenite of the free quartz introduced by the clay. The additive, being incompatible with quartz, is more active in dissolving quartz than are the feldspar minerals, albite and microcline. An addition of 5% nepheline syenite to the clay mix reduced kiln losses due to theral cracking, from 25% without material to 50% with nepheline syenite. The added recovery from the kiln more than offset the cost of the additive.

Mr. & Mrs. Joseph Mullan, Champion Brick Co., listen while J. C. Steele, J. C. Steele & Sons, and Fred Buzzard, F-R-H Co., point out the best qualities of their respective machines.

Eugene Clemens, Cannelton Sewer Pipe Co., C. W. Enyart, Bonnot Co., and M. S. Hoffman, Leeds and Northrup Co. review the day's activities.

New Refractory Material Offers

Glasrock after being heated to red-hot temperatures can be inserted in cold water with no resultant spalling.

Glasrock, a new refractory material that has practically no expansion when heated, low thermal conductivity, and excellent thermal-shock resistance has been developed by Glasrock Products, Inc., in Atlanta, Georgia. This material is now being used in many specialty applications, but because of its properties is open to a wide variety of other refractory applications.

Some of the specialty applications in which Glasrock is now being used are: pumper tubes in low pressure aluminum die casting machines, one piece refractory rings for steam generators, as lock-up material for nose cones in rockets and as a forming material for stainless steel.

Since Glasrock has proved so successful in these applications, Glasrock management feels that this product is still unexplored and is constantly striving to find other areas where the application of Glasrock will prove economical. Research is currently under way.

Old But Little Used Material

Actually this refractory material, fused silica, is well-known to many people in the ceramic and refractory industry. It is an old material which because of the complexities of forming has not had widespread use till now except in very special applications. During August, 1956, Glasrock Products, Inc., but then known as the North Foundry Mold Company, initiated a project at the Engineering Experiment Station of Georgia Tech for the purpose of finding ways to make permanent foundry molds from fused silica.

The sponsor thought that the following method held promise of breaking through the price barrier of producing a mold to compete with sand casting: a precision casting ceramic material (fused silica *grain* or *powder*) would be used to form a thin shell, backed up by foam silica material. It was felt that this combination would provide a permanent mold with either a permanent or renewable liner, depending upon the size or configuration of the piece to be cast. The high cost of the materials in this case would be offset by the fact that several castings could be made from one mold with a minimum of time and labor involved. During the early phases of this project, it became apparent that foamed fused silica would not be available in any quantities for a long period of time.

But traditionally, out of such unfortunate circumstances come new developments. In this case a new inexpensive method of bonding the fused silica was developed and the sponsor was inspired to manufacture fused silica himself and to produce the entire mold from the bonded fused silica. Now the problem was to develop practical and workable techniques of forming the molds into proper shapes with desired surfaces and strength.

Studies Evaluate Properties

Studies were initiated to evaluate the properties of bodies fabricated from this new source of fused silica. The properties were evaluated as functions of particle size binders, milling and firing conditions. From these studies a fused silica slip was developed which opened the door to forming massive and complex shapes.

The fused silica slip is used in forming shapes by slip casting in porous molds such as plaster, or as a binder for coarse fused silica aggregate to be used in the forming of massive shapes. The various range of sizes can be achieved in this casting process, ranging from small intricate shapes which are used to house a heat sensing element in a satellite to massive shapes being used as hearths for heat treating furnaces.

A fused silica slip—fused silica aggregate castable mixture—has been used in the fabrication of refractory boiler liners. These refractories have been in service on Diesel locomotives for over two years without replacement.

Slip cast fused silica is being used in the steel industry for fabrication of ladle liners and pouring spouts used in handling molten iron. It has also found wide use in the fabrication of investment casting molds for the produc-

Spectacular High Temp Performance

tion of precision cast metal parts utilizing the "lost wax" process. The most recent uses in the metal industries are involved in the handling of molten aluminum. Other areas of refractory applications for fused silica include stainless steel formation.

This foam is presently being used for refractory brazing forms on which honeycomb stainless steel panels are brazed. Such panels are presently being used in the construction of supersonic aircraft. It should be noted that at the present time, no other refractory material has been found which is satisfactory for this use. Dimensional stability over large thermal gradients, thermal shock resistance and ease of fabricating large contoured shapes are some of the prime requirements for a material for use as brazing forms or fixtures.

A Note on Fused Silica

Of course, fused silica has been known for quite some time and considerable information about its physical properties can be obtained from handbooks. However, it should be remembered that most of this information is for clear fused silica and the fabrication techniques are usually concerned with forming the desired shape while it is in the molten state. Here we are dealing with the same basic material, but it is not in the same physical state. The material discussed here is clear fused silica which has been crushed into fine particles; the particles are then cemented together to form the desired shapes.

The effect of pulverizing the fused silica on the physical properties of the final product can be illustrated by comparing the thermal conductivity of clear fused silica. Clear fused silica exhibits a rapid rise in thermal conductivity above 300 degrees F, whereas slip cast fused silica remains a good insulator up to 2000 degrees F. This difference is attributed to the transmission of radiant energy in the clear fused silica and the diffusion of radiant energy by the small particles of the slip cast fused silica. This fact has allowed slip cast fused silica to be used as reflectors for clear fused silica radiant heating lamps. Thus, the same material has been used for both transmission and reflection of radiant energy.

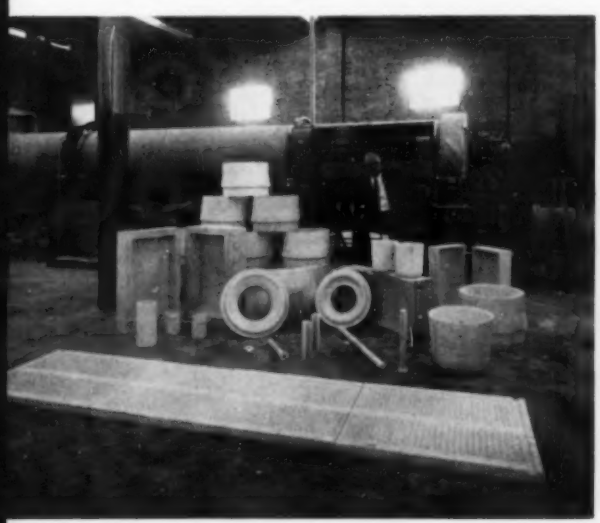
Thin kiln walls are possible to build because of the insulating value of Glasrock.

Another example of the comparative thermal shock resistance. The very low thermal expansion of fused silica allows it to withstand severe thermal shock. Although the thermal expansion of slip cast fused silica is the same as clear fused silica, its thermal shock resistance is actually superior. This is attributed to the fact that numerous very fine particles bonded together provide areas of thermal stress relief which are not present in the solid clear glass.

Example of Low Thermal Conductivity

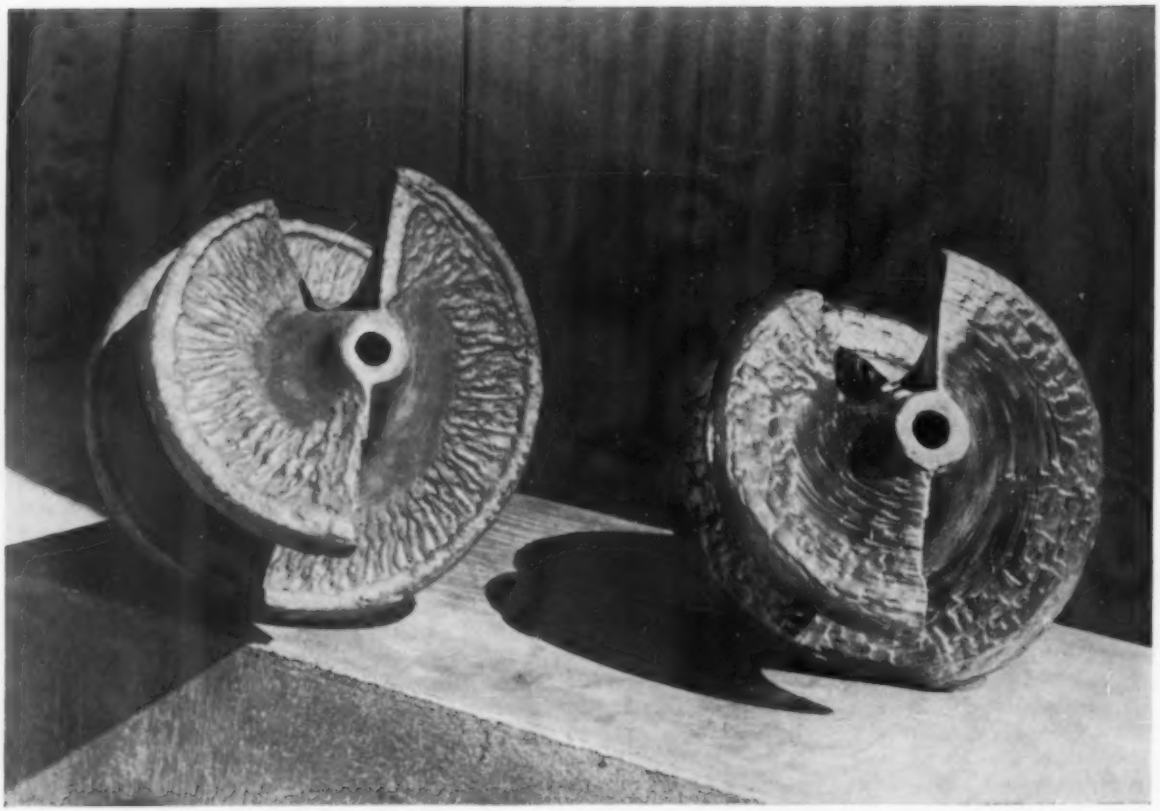
Another example of the extremely low thermal conductivity can be illustrated in a typical insulation using Glasrock foam. In a furnace wall, 4″ thick, when the interior of the furnace is red hot (2000 degrees F), the cold wall temperature is about 180 degrees. When tearing the small laboratory furnace apart it can be seen that the read heat penetrates only about ¼ of an inch. Also, because of the low conductivity, the fused silica foam acts as a reflector building up the heat in as much as there is little absorption in the wall proper. Because of this a furnace can be heated from room temperature to 2000 degrees in a matter of two hours.

Glasrock Product, Inc., is currently operating three sites. The development labs of the company are located in Atlanta, and a present melting plant is located in Calhoun, Georgia, about seventy miles north. A new fabrication plant for the fabrication of special refractory shapes is now under construction in Marietta, a suburb of Atlanta.



The material is available in a variety of sizes and shapes as illustrated.

Point Auger life increased from 1 week to 15 weeks *with Stoody Hard-Facing...*



ILLUSTRATED ABOVE:

Point Auger at right shows polishing effect of Stoody 21 after considerable service. Note: All cast iron parts require pre-heating to a dull red heat (800°F) before hard-facing. Slow cooling thereafter, preferably in a furnace, is recommended.

Point Augers in one plant were lasting 1 week, were then discarded because of wear. Hard-faced with Stoody 21, life was stepped up to 3 weeks. Each auger was thereafter rebuilt 4 to 5 times, giving an average total of 15 weeks' service! Moreover, because of retarded wear, high polish of the hard metal and ability of hard-faced augers to hold gauge, almost twice as much material was handled per hour! For even longer service life many brick plants add Stoody Borod to flight edges.

Here's another tip on maintaining augers and other types of equipment: withdraw parts from service while still salvageable and keep a spare parts inventory of hard-faced replacements. This gives weldors ample time to keep ahead of hard-facing requirements and minimizes costly downtime.

Hard-Facing Guidebook — Latest hard-facing techniques on all types of wearing equipment are described and illustrated in the Guidebook. Ask your Stoody Dealer for a copy (check the "Yellow Pages" of your phone book) or write to the company.

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Circle Service No. 41

Cold Weather . . .

(*Continued from page* 53)

one think immediately of putting anti-freeze solutions in his auto. The same care applies to earthmoving and construction equipment engines. With diesel engines, it is advisable to use permanent-type anti-freeze solutions because of their higher operating temperatures.

Although some operators prefer to use water only as a coolant and drain the block and radiator at the end of each day, it is a risky business. Failure to drain out the water just one time can result in expensive damage to the engine.

Fuel System

While considering the possible damage caused by water freezing in a diesel engine, it should be kept in mind that the fuel system can also turn up trouble because of water. The best means of keeping water out of the fuel system is to prevent condensation inside the fuel tank. This is possible by filling the tank completely at the end of the workday. This pushes out the moisture-laden air. Also, much of the water that still gets into the system can be gotten rid of by draining off a small amount of fuel each morning. The fuel filter housing of Caterpillar Diesel Engines has a sump which traps any remaining water carried in the fuel. During cold weather the fuel filter housing should be drained at regular, short intervals to prevent accumulated water from freezing and possibly cracking the housing.

Other points to be considered for cold weather operation are: the type of fuel used, the general condition of the electrical system and the care given the battery. For sub-zero operation, a fuel having an unusually low pour point should be used to insure proper flow of fuel from the tank to the fuel transfer pump. These are often called "winter grade" fuels and are available in most cold areas.

Electrical System

Before cold weather has arrived, the entire electrical system should be checked over . . . especially the starting engine magneto. For units fitted with direct electric starting only, particular attention should also be given to the battery. This should be tested frequently and charged whenever the charge drops below standard in order to insure sufficient power for starting. A discharged battery should never be exposed to freezing temperatures as the electrolyte can easily freeze, causing the battery case to break.

A strong battery is especially important in cold weather since a battery's "cranking ability" drops quickly in cold weather and at the same time, the "drag" or inherent engine resistance increases rapidly. This means the battery has less energy to do a more difficult job.

Air Cleaner

Oil bath type air cleaners should receive even more careful attention during cold weather. As temperatures drop, oil in the air cleaner cup may have to be changed to SAE 10 weight in order to be carried up into the screens. If the oil does not reach and coat the screens, the efficiency of the cleaner drops considerably.

When equipment is operated in

(*Continued on page* 64)

Tabor "350" machine applies squeeze and jolt simultaneously while molding super refractory at Richard C. Remmey Sons Co., Philadelphia subsidiary of A. P. Green Fire Brick Co.

New Type Jolter Increases Refractory Production

—better compacting, smoother finish

The Tabor "350" replaces pneumatic rams, and hydraulic presses in the molding of refractories — cylinders, saggers, recuperator tubes, shelves, furniture, intricate shapes.

When the mold has been filled, a pre-jolt settles the particles, and starts the squeeze-jolt operation — a 12,000 lb. squeeze combined with continuous hammering by a 525 lb. anvil, striking at 7 blows per second.

Faster, more efficient than ramming. No need for expensive press equipment.

For superior orientation of grains, improved lateral flow, smooth and even surface finishes, investigate the Tabor "350". Call or write us today.

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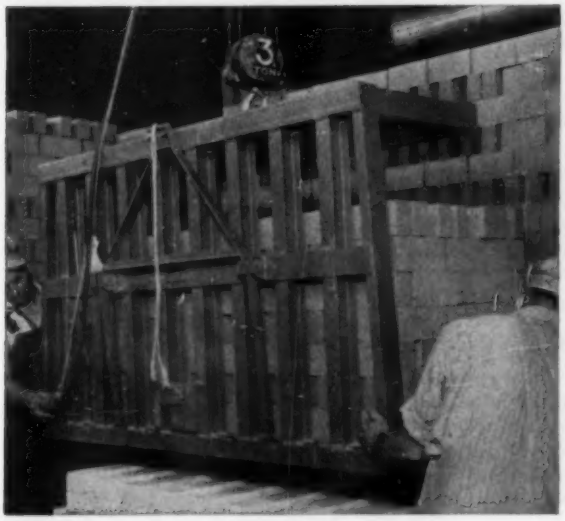
Make Brick Handling Easy...

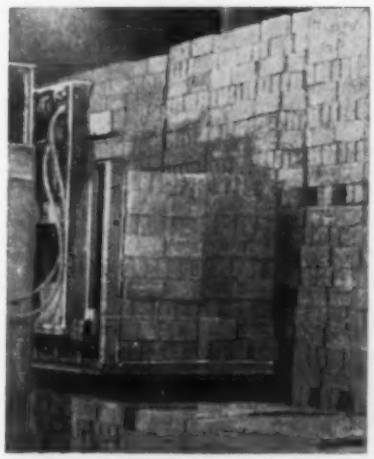


PRIESTER Brick Forks

- **Save Time**
- **Save Money**
- **Save Labor**

Also Priester truck cranes for unloading from delivery trucks. Write for bulletin.

Brick in units of any size are handled by Priester Brick Forks. Automatic operation simplifies and speeds brick handling setting and drawing kilns, loading and unloading trucks and box cars.



Forks with flap grippers for cored and solid brick. Give service . . . take the hard work out of brick handling. Write today for more information.

BRADNEY MACHINE CO., INC.

Middletown, New York

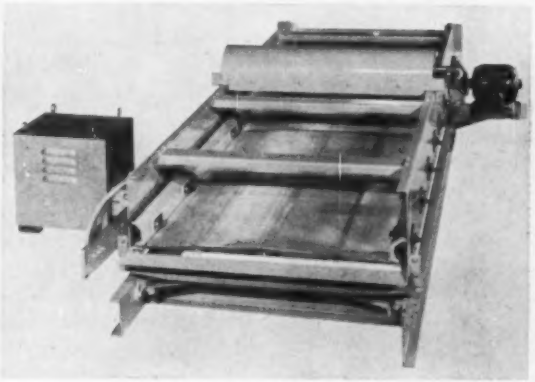
Circle Service No. 43

NEW!

FROM UNIVERSAL

A HIGHLY EFFICIENT PROVED PERFORMER AMONG VIBRATING SCREENS NOW TEAMED UP WITH THE LATEST IN MODERN SCREEN HEATING EQUIPMENT . . . . .

TYPE "K" 4' x 10' SINGLE-DECK



NEW! Laminated Aluminum Conductors Replace Old-Fashioned Braided Cable Conductors . . . . .

NEW! Two 4' x 5' Screen Panels Are Employed In Split-Deck Principle For Efficient Series Heating And Rapid Mesh Changes . . . . .

NEW! Latest Style Extruded Aluminum Side-Rails For Uniform Mesh Tension And Equal Distribution Of Heat Over Entire Screen Area . . . . .

NEW! Fool-Proof Insulating Method . . . . .

Plus many more great new features

Write Dept. "BC" For Free Literature on Screens and Screening.

UNIVERSAL VIBRATING SCREEN COMPANY

1745 Deane Blvd. • Racine, Wis.

Quality Screens Since 1919

Circle Service No. 44

(*Continued from page 62*)

blowing snow, the air cleaner should be checked frequently since the cleaner or its inlet may be plugged quickly.

Dry type air cleaners, now standard on all Cat-built earthmoving machines, require no special attention in winter operation other than frequent checks against plugged inlets.

Equipment Storage

The great danger to guard against in storing equipment is rust, both internal and external. Preventing its formation is of the greatest importance.

Equipment to go into storage should be first thoroughly lubricated, then completely washed, followed by spot painting of exposed metal surfaces. Bulldozer blades, cutting edges, moldboards and other external surfaces not repainted should be coated lightly with grease to protect them from rust and corrosion.

The cooling system should be protected by filling with a permanent anti-freeze solution that contains a rust inhibitor. If the engine is to be stored with a drained cooling system, however, a soluble oil type rust inhibitor should be added to the coolant during the last week of operation. This allows a film of oil to spread throughout the inner surfaces of the cooling system and provides a coating against rust.

If possible, however, it is best to store machines with permanent-type antifreeze so that the engine can be turned over at weekly intervals without requiring special preparations.

Crankcases, transmission cases and final drives should be cleaned, flushed and refilled with new oil before storing machines for the winter.

Start Each Week

If possible, machines should be started once each week and the engine allowed to run several minutes. Also, on track-type tractors, it is advisable to run the machine forward and backward several times in order to redistribute the oil in the transmission and final drives, recoating all interior parts.

Under circumstances where it is not possible to operate the engine or machine on a weekly basis, it is advisable to add a cupful of oil in the top of each cylinder (less for small tractors and engines).

Rubber-tired units should be blocked up, if possible. If blocking is not practical, it is important to be sure that proper pressure is maintained throughout the storage period.

Above all else, however, before preparing equipment for winter storage, it is essential to read the operator's handbook for each machine involved. Much greater detail is offered in these booklets than is possible in this space. Proper precautions taken before the dead of winter arrives will assure each owner that his machines will be ready for operation when the full work season next gets underway.

Dickey's 75th Anniversary Brochure Hails Progress

The W. S. Dickey Clay Mfg. Co., Kansas City, Mo., has announced a beautifully illustrated 75th anniversary brochure commemmorating the company's three quarters of a century as a pioneer and leader in the sanitation field. The 48-page publication traces the development of sanitary engineering and Dickey's role in the evolution of modern sanitary sewerage facilities.

AVOID COSTLY INJURIES

LONG-WEARING TUFHORSE MITTENS AND PADS GIVE EXTRA PROTECTION

Tufhorse KANT-RIP

DES MOINES GLOVE & MFG. CO.
Des Moines, Iowa

Increase the output of your men by protecting their hands with famous Tufhorse gloves, hand pads or mittens. Made of most durable leather available. Split cowhide, Tufhorse Kant-Rips are always flexible and comfortable to wear.

Please help me to avoid costly hand injuries! Send me samples of:
Glove No. G-9 ($18.50 per dozen pairs)
Mitten No. 300 ($14.40 per dozen pairs)
Hand Pad No. 308 ($8.40 per dozen pairs)
(All F.O.B. Des Moines)

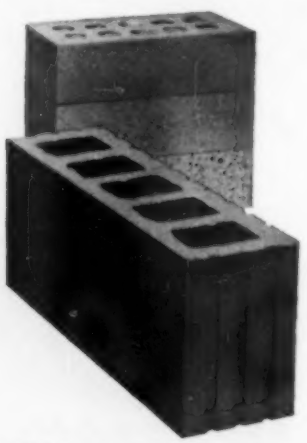
Name_____
Firm_____
Address_____
City_____
State_____
Sample Gloves at per dozen prices

Circle Service No. 45

MASON

STRUCTURAL CLAY COLORS

Underglaze and Overglaze Colors
Glaze Stains • Body and Engobe Stains



MASON Color and Chemical Works, Inc.
East Liverpool, Ohio, U.S.A.
HIGHEST QUALITY SINCE 1842

Representatives
Midwest: G. S. Robins & Co., 126 Chouteau Avenue, St. Louis 2, Mo.
Pacific Coast: John K. Bice Co., 440 Seaton Street, Los Angeles 13, California

Circle Service No. 46

Parmanco

SPECIALISTS IN AUGER TYPE DRILLS

. . . DRILLS MEAN FASTER MORE ECONOMICAL DRILLING

Model HV-172 Drilling Feature Check List

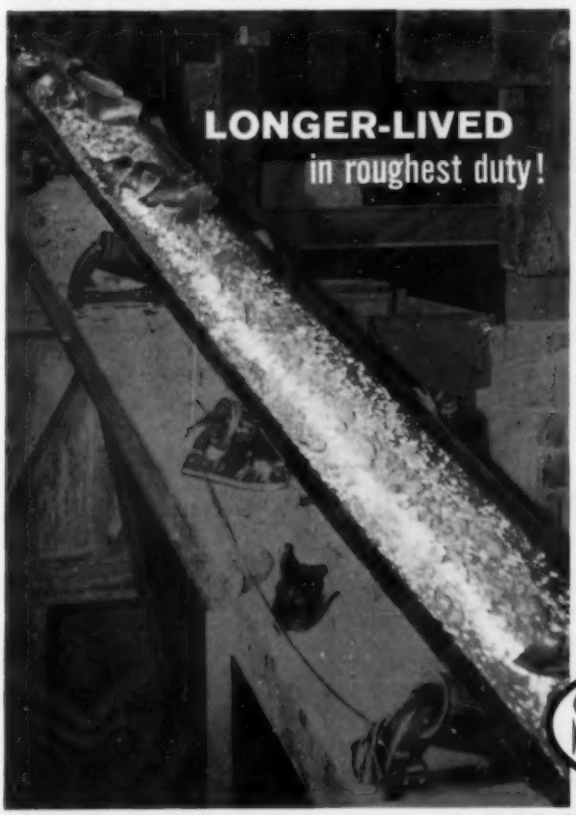
- Four drilling speeds with reverse
- Drill powered by 65 H.P. motor or 106 H.P. motor
- Heavy duty truck type transmission with 10" truck clutch
- Three leveling jacks to insure straight holes
- Hydraulic feed for fast, smooth, dependable easy operation
- Mounted on 3 wheel chassis or truck
- Drills holes to 100 feet or more

Complete Information on Request

Model HV-172

PARIS MANUFACTURING COMPANY
PARIS, ILLINOIS

Circle Service No. 47



A typical Scandura application—inclined conveyor handling raw clay and scrap.

Scandura

GOLD PVC LINE

BELTING

Scandura PVC — the *original* solid-woven polyvinyl coated belting — won its spurs in the heavy ceramics industry, with many installations in Ohio's brick, sewer pipe, ceramic tile and drain tile plants. Today, Scandura PVC Belting is first choice everywhere for drag conveyors, off-bearing conveyors, bucket elevator belts and transmission belts — offering unmatched strength and endurance. Write for the Scandura facts; also for full information on our Fentonia and Scandinavia solid-woven bituminous treated brands for inclined scrap return conveyors and measuring belts.

Manufactured by

Scandura INC.

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(P. O. Box 949)
Charlotte 1, North Carolina

Circle Service No. 48

SILANEAL®
keeps brick clean
SILANEAL
keeps brick clean
SILANEAL
keeps brick clean
SILANEAL
keeps brick clean
SILANEAL
keeps brick clean
SILANEAL
keeps brick clean
SEE
PAGES
8 &
9

SCPI Meeting . . .

(*Continued from page* 55)

is important since, one of the best salesman for brick is the bricklayer and his workmanship. Murphy called for industry cooperation between mason contractor, dealer and manufacturer and noted the BMPIU would encourage it.

Ultimate Costs Studied

The fact that more information is needed on the costs of construction, on thermal and accoustical performance and heat conductivity of walls was brought out by Louis Rossetti, FAIA, Giffels & Rossetti, Detroit, Mich. Rossetti wanted to know more on new products as they appeared. He pointed out that there is a trend for architects to restudy their operations and make estimates on ultimate costs rather than first costs. He favors a renaissance to structural clay products.

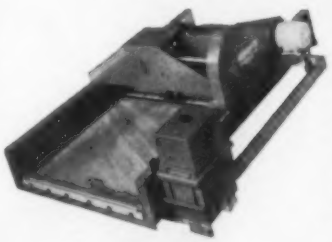
John E. Clark, director of promotion, Structural Clay Products Institute, Washington, D. C., talked on "The Combination to Successful Selling". He reviewed the programs for the coming year in advertising and promotion and showed some of the literature that was being prepared. The literature and advertising was to be supported by meetings throughout the different regions. Meetings would be held for builders, buyers, and bankers. There will be meetings with architects, savings and loan associations, and with the industry's salesmen.

Robert B. Taylor, director, Structural Clay Products Research Foundation, Geneva, Illinois, said in his talk that more wall area has been sold this year than in the heyday of the industry. He attributed this to the thinner walls that are being sold with the high volume of clay products. He related his experiences in promoting new products and particularly the panel construction which has just recently been applied.

The talks on promotion and advertising were supported also by Robert D. Denny, public relations director, Henry J. Kaufman and Associates, Washington, D. C., Thomas H. Creighton, III, SCPI, Washington, D. C., Thomas Mabley, III, SCPI and NADD, Washington, D. C.

(*Continued on page* 68)

Faultless Screening for Your Particular Plant



THE Leahy NO-BLIND VIBRATING SCREEN
— offers —
INTEGRATED HEAT SCREENING

For the plant that is "routine" or for the plant that is "different", the Leahy® No-Blind® Screen meets every condition.

It operates with utmost efficency as a single unit or in battery.

FlexElex® heating transformers are mounted outboard on the right side, the left side or alternating for space economy.

Electrical connections to the jacket are through direct runs of bus bars that eliminate flexible connectors and put the power where it belongs—in the mesh.

No other screen offers such reliable, low cost performance. Send for Bulletin 16-EH.

THE DEISTER CONCENTRATOR CO., INC.
The Original Deister Co., Est., 1906
913 GLASGOW AVENUE FORT WAYNE, INDIANA
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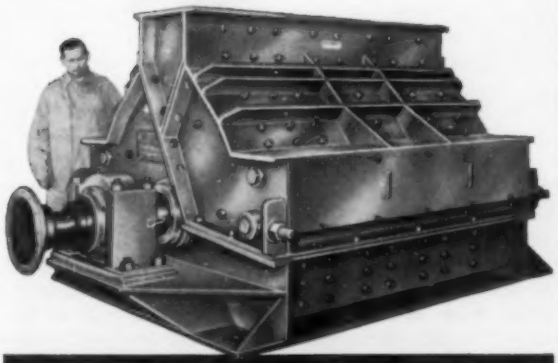
1 LOWER COST GRINDING

2 POSITIVE PRODUCT CONTROL

3 MORE GRINDING IN LESS TIME

4 LESS UPKEEP EXPENSE



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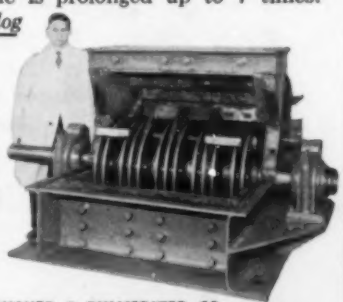
REVERSIBLE IMPACTOR

The economy, speed, quality control and low upkeep of a Reversible Impactor is unmatched for reducing bank run material to proper fineness for burned ware. In closed circuit systems, with external vibrating screens, absolutely uniform sizing to specifications is assured.

No grates are used thus minimizing upkeep expense. Reversible rotation makes manual turning of hammers unnecessary; adjustable impact blocks cut labor, downtime. Parts life is prolonged up to 7 times!

Write today for catalog



Internal view showing manganese steel impact blocks, hammers and liners. Rugged, heavy steel plate construction. Extra large shafts are mounted in oversize bearings sealed in self-aligning housings.

WILLIAMS PATENT CRUSHER & PULVERIZER CO.
2709 N. BROADWAY • St. Louis 6, Mo.

WILLIAMS
CRUSHERS GRINDERS SHREDDERS
OLDEST AND LARGEST MANUFACTURER OF HAMMER MILLS IN THE WORLD

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"Ceramic"
GIVES YOU
DEPENDABLE QUALITY
and
RELIABLE SERVICE
on
COLORS and CHEMICALS
for BRICK and TILE

GLAZE STAINS
ENGOBE STAINS
IRON OXIDE GRANULES
NICKEL OXIDE GRANULES
MANGANESE OXIDE GRANULES
COLORED GRANULES
ALBANY SLIP
ALUMINUM HYDRATE
ALUMINUM OXIDE
BARIUM CARBONATE
CALCIUM CARBONATE
COBALT OXIDE
COBALT SULPHATE
COPPER OXIDE, BLACK
DOLOMITE
FLUORSPAR
GREEN CHROMIUM OXIDE
GUMS
IRON CHROMITE
LEAD BISILICATE
OPAX and SUPERPAX
RED IRON OXIDE
RUTILE
WHITING
ZIRCONIUM SILICATE
ZINC OXIDE

This is a partial list of materials available. Write or call about any color or chemical you use in your production.

C-48

CERAMIC COLOR and CHEMICAL MFG. CO.
NEW BRIGHTON, PA., U. S. A.
Phone TIlden 6-4000

Circle Service No. 51

(*Continued from page* 66)

Douglas Whitlock, general counsel and chairman of the board, Structural Clay Products Institute, talked on "Depletion Status and Convention Summary". He first reviewed the rulings of the Supreme Court in its recent decision and covered the legislation which was passed about the same time. He stated that the Cannelton case does not over rule the Merry Bros. case. He suggested that more court cases are a possibility under the Merry Bros. ruling. There are 189 cases pending now and they could give guidance on the position and procedure to take if decided according to the Merry Bros. case.

He said that the legislative action taken may color the judicial decisions if cases were argued on the Merry Bros. case. In the local area value put on the clay will complicate any decisions. He said that the treatment of the industry, the inequitable treatment, should be remedied, and this remedy is still to be determined.

He said the industry could accept an increase from 5 to 15% at the pug mill. It could accept the same treatment as the cement industry gets and that is a rate at the kiln feed. However, no decision has been made as to what might be a compromise.

Conventioneers Optimistic

In summarizing the convention, he stated that there was optimism in the industry. He said that business will be all right and it will be at least the same as last year and possibly better than 1960. He predicted that there still will be a great expansion in construction during the middle 60's. The government will enter more into the picture and money will be contributed to education, welfare programs, and housing. There is no lack of optimism and the industry must prepare for what they expect.

He gave much credit to the mason industry cooperation and to his staff activities.

He said that aside from the already released educational pieces, a complete set of five releases will come forth. The first is "Man and Masonry", the second will be "Patterns and Textures", the third will be "Color", the fourth "Flexibility of Clay Products in Design", and the fifth will cover "Economics".

Paul Belden, Jr., was re-elected as President for the next year. The 1961 meeting is scheduled for the Greenbrier, White Sulphur Springs, W. Va.

Voters OK $3 Billion in Bonds

The nation's voters during the recent election have given their approval to $3.2 billion worth of civic construction.

Out of an all-time high of $3.4 billion worth of propositions, the voters approved $3.2 billion worth—a record high approval rate—while rejecting only $200.1 million worth, or only 5.9%.

The bonds that have been passed and their amounts are: sewerage, $201,522,000; schools, $356,198,000; urban redevelopment, $22,350,000; public buildings, $38,203,000; institutions, $173,065,000; colleges, universities, $250,500,00.

The second largest amount of proposals was for schools, the highest being for road construction. As in past years, voters generally looked with favor on school expenditures.

Keep Mullers Mixing

Colmonoy hard-surfaced shaft after 2000 hrs. on bushing. No sign of wear.

Colmonoy Hard Surfacing Cuts Down Mulling Costs

A midwestern firm solved its problem of excessive muller bushing wear by applying Colmonoy No. 6 to shaft's bearing contact areas. High abrasion resistance and low coefficient of friction of Colmonoy alloy gave approximately 4,000 hours bushing life, versus former 280 hours running against carbon steel shaft. Protection can be applied repeatedly.

There's a wide variety of Colmonoy Alloys that cut costs, resist all kinds of wear. Send for the Colmonoy Hard-Surfacing Manual today.

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Buffalo • Chicago • Houston • Los Angeles • Morrisville • New York • Pittsburgh • Montreal • London, England

Circle Service No. 52

SCHURS NO. 12

LOW PRESSURE OIL BURNERS

Control Handle at Rear of Burner Adjusts Flame Pattern

For Use with Air at 24 to 32 Ounce Pressure or High Pressure Air if Specified

"Be Sure Its Schurs!"

Versatile . . .

Efficient . . .

SCHURS

BURNER & EQUIPMENT, INC.

8956 S. Atlantic Ave. South Gate, Calif.

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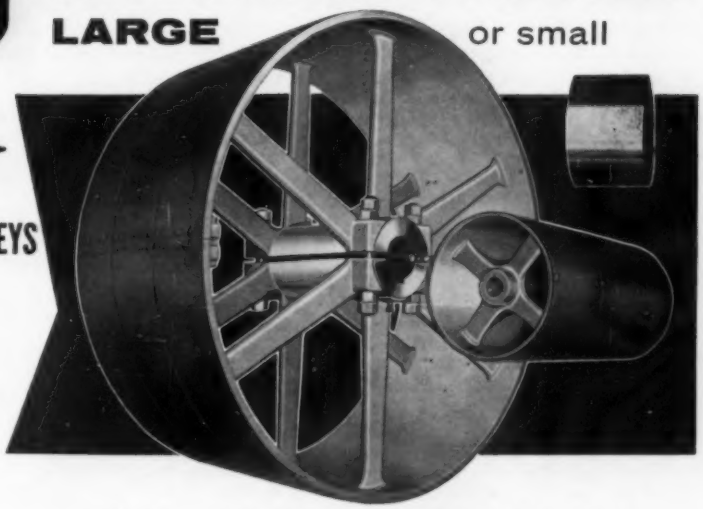
Circle Service No. 53

PULLEYS THAT PERFORM ON THE JOB...

LARGE or small

EHRSAM

MICROMETAL CAST-IRON PULLEYS



There is no substitute for experience in producing cast-iron pulleys for use in our many modern industries. Today, after 88 years of experience, the Ehrsam Company is still continuing research to produce quality cast-iron pulleys.

Whether you use small pulleys or large pulleys, totally split pulleys, corrosive surface or wearing surface, you can be sure of quality gray cast-iron plus service when you specify Ehrsam Micrometal pulleys.

In quality cast-iron pulleys, experience counts and this is what Ehrsam is noted for. Call the J. B. Ehrsam and Sons Manufacturing Company and discuss your needs for standard or special pulleys.

THE J. B. EHRSAM & SONS MFG. CO.

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BRANCH OFFICES: ATLANTA, GEORGIA; CHICAGO, ILLINOIS; DENVER, COLORADO; DES MOINES, IOWA; FORT WORTH, TEXAS; HASTINGS, NEBRASKA; KANSAS CITY, KANSAS; PHOENIX, ARIZONA; SAN FRANCISCO, CALIFORNIA.

SALES REPRESENTATIVES: THOMER EQUIPMENT CO. • MINNEAPOLIS, MINNESOTA

Circle Service No. 54

Today's technology needs

CERAMIC GLAZED PIPE

Offer your customers the unique advantages of completely modern, ceramic glazed clay pipe. They get over 20% greater strength . . . full, smooth glaze inside and out . . . color for coding lines or your brilliant "trademark" at no additional cost . . . full resistance to both acids and alkalies.

You benefit with greatly prolonged kiln life, simplicity of production, and dependable glazes especially tailored to your clays by the Pemco laboratories. Write for more information.

50 YEARS OF RESEARCH AND A FLAME

PEMCO CORPORATION

BALTIMORE 24, MARYLAND

CERAMIC FRITS AND INORGANIC COLORS

Circle Service No. 55

B&CR Annual Editorial Index -- 1960

Brick & Clay Record is the magazine of brick, drain tile, structural tile, clay aggregate, terra cotta, roofing tile, refractories, clay pipe and abrasives and is devoted exclusively to these subjects. Its editorial content is balanced and provides the reader in the heavy clay products field with the most comprehensive an up-to-date information on the subjects of particular interest to him—every month, throughout the year.

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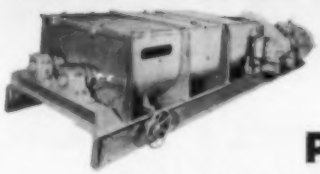

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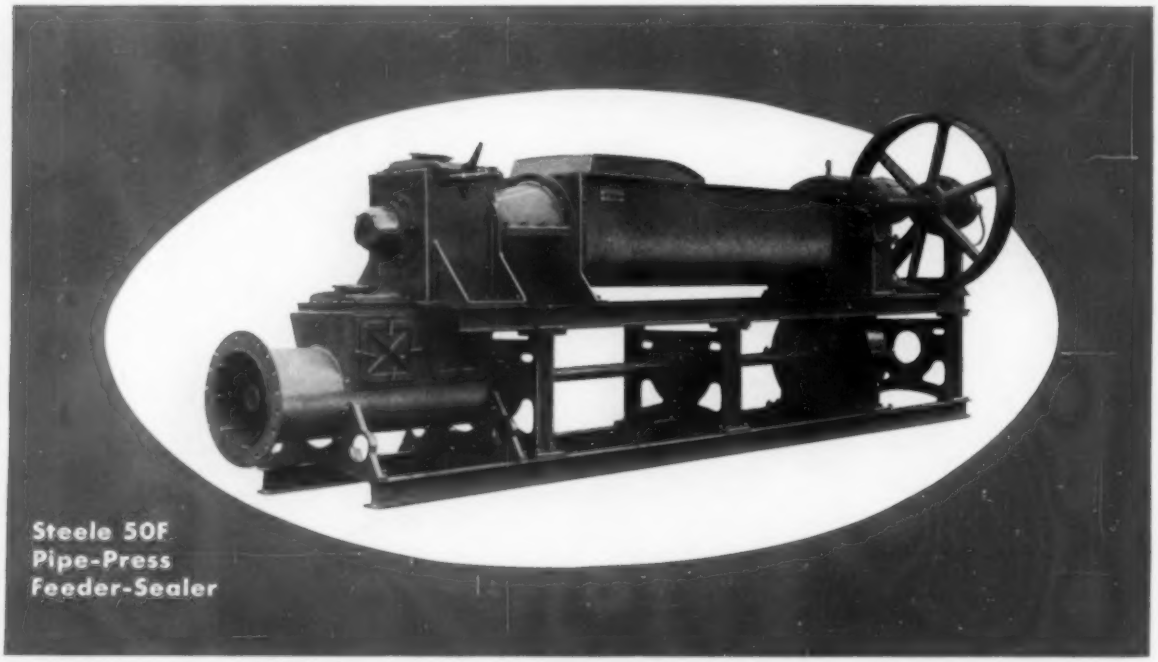
Lynchburg, Virginia

CONTRIBUTING ASSOCIATE SCPI

Circle Service No. 60



Steele 50F
Pipe-Press
Feeder-Sealer

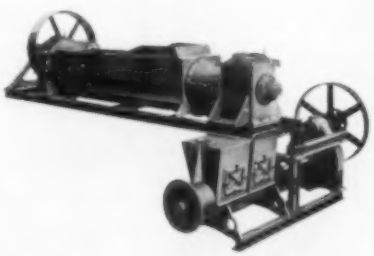
Once "SPECIAL"
Fast Becoming "STANDARD"

All standard "Combined Deairing Machines" have had their drawbacks in pugging, sealing, shredding, and discharging clay into the enclosure of a vertical steam or hydraulic sewer pipe press.

In response to a demand for better clay preparation for this purpose, Steele developed the two machines, shown here, as "Special Equipment". This equipment has proven so efficient that it has become the "Standard" for the job. Here is what it gives you.

- **a.** MAXIMUM pugmill diameter and length (volume) so that clay will be homogenous and well prepared.
- **b.** ADEQUATE power transmission capabilities of the pug-sealing portion of the equipment, but MINIMUM for the feeding portion, since it is only a matter of shoving loose shredded and deaired clay into the mud-head enclosure.
- **c.** MAXIMUM accessibility of parts, including the feeder-augers, which can only be replaced from the FRONT of a standard Combined Machine, but on this machine go in from the side.
- **d.** MINIMUM weight, consistent with provision for performing the job to be done. Such installations are almost always on elevated steel frameworks.
- **e.** MINIMUM wearing parts, considering the basic job to be done.

The Steele No. 50F Pipe Press Feeder Sealer, shown above, has a single drive. The No. 50F Pug Sealer plus the intermittent Pipe Press Feeder, shown in the insert below, has two entirely separate drives.



Write for Details and Prices

SUSTAINING ASSOCIATE SCPI

J. C. Steele & SONS Statesville, N. C.

Pacific Agents: Walter C. Stoll, 5028 Alhambra Ave., Los Angeles 32, Calif.

THE BEST IN CLAY MACHINERY SINCE 1889

Circle Service No. 61

"F-R-H De-airing Extrusion machine Increases Brick and Tile Production 20%"

Reports Rockford Brick & Tile Co., Rockford, Iowa

Rockford Brick & Tile Co., Rockford, Iowa produces high quality brick, drain tile, and hollow building tile. Drain tile production is 125 tons per day. A user of F-R-H Ceramic Machinery for more than 40 years, the company reports a 20% *increase in production with current F-R-H equipment.*

Present equipment includes an F-R-H Model WJ—Type 12 De-airing Extrusion machine and an F-R-H Model 28T Tile Cutting Unit. The firm's compact De-airing Extrusion equipment features *double pug shafts* for highest pugging efficiency, eliminates many product variables to keep rejects to a minimum.

Replacement of parts is accomplished with minimum down-time and without disturbing the permanent seal of the vacuum chamber. Find out how F-R-H Ceramic Machinery can improve *your profit picture.* Send a brief outline of your plant operations to The Fate-Root-Heath Company, Dept. B-1, Plymouth, Ohio.

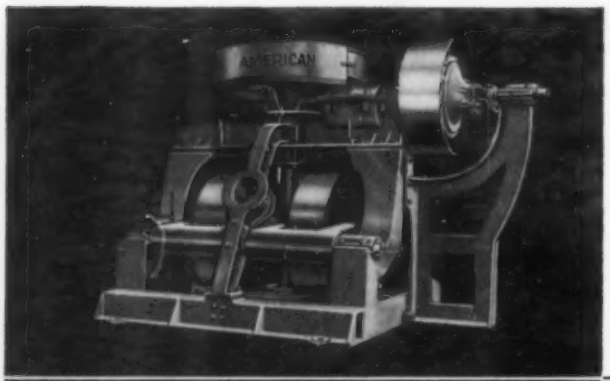
F-R-H

CERAMIC MACHINERY

FOR 100% OPERATING EFFICIENCY—ORDER GENUINE F-R-H REPLACEMENT PARTS DIRECTLY FROM THE FACTORY

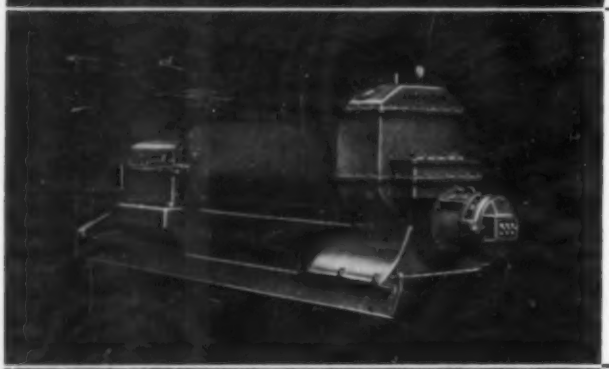
Circle Service No. 62

MAKE *American* THE START OF AutoCLAYmation PLANNING



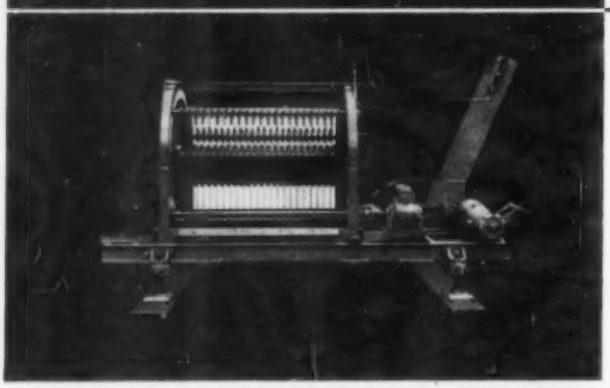
AMERICAN GRINDERS

Designed for volume clay production . . . eight models range from 15 to 80 tons per hour capacity. Materials can be handled wet or dry . . . no screen plates to clog or slow down production. Low initial investment . . . requires only a minimum of floor space . . . low power consumption . . . needs only a minimum of maintenance.



AMERICAN DE-AIRING COMBINED MACHINES

Machine handles building, fire or paving brick, also hollow block and drain tile. Capacity range is from 3,000 to 18,000 building brick per hour or 10 to 40 tons of hollow ware per hour. This capacity is governed by the clay used, size and kind of ware manufactured and by the operating speed.



AMERICAN AUTOMATIC ELECTRIC CUTTERS

Hourly capacity is 3,000 to 18,000 bricks . . . 23 standard bricks per cut. Every motion is electrically controlled to give precision accuracy of any brick or tile cut up to 14"x14". The cutter is a complete unit, there are no extras needed. Hinged measuring frame can be lifted to give necessary room to change die or front.

AutoCLAYmation stands for more efficient means and methods in the production of clay production. "American" clay machines fit into AutoCLAYmation planning because they are designed for volume clay production . . . production that will spell profit for your operation. "American" specialists have the experience to design and outfit a complete plant from pit to kiln, or solve any phase of a brick or tile production problem. Write or call for complete information.

American CLAY MACHINERY

A Division of HUBER-WARCO COMPANY
Marion, Ohio, U.S.A.

Plants in Marion and Bucyrus, Ohio
Cable Address: HUBARCO

OVER A CENTURY OF EXPERIENCE IN THE MANUFACTURE OF CLAY MACHINERY

Circle Service No. 63